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UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

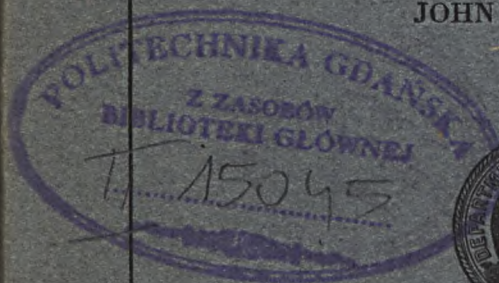
BULLETIN 617

BIBLIOGRAPHY
OF
NORTH AMERICAN GEOLOGY
FOR
1914
WITH SUBJECT INDEX

BY
JOHN M. NICKLES



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1915



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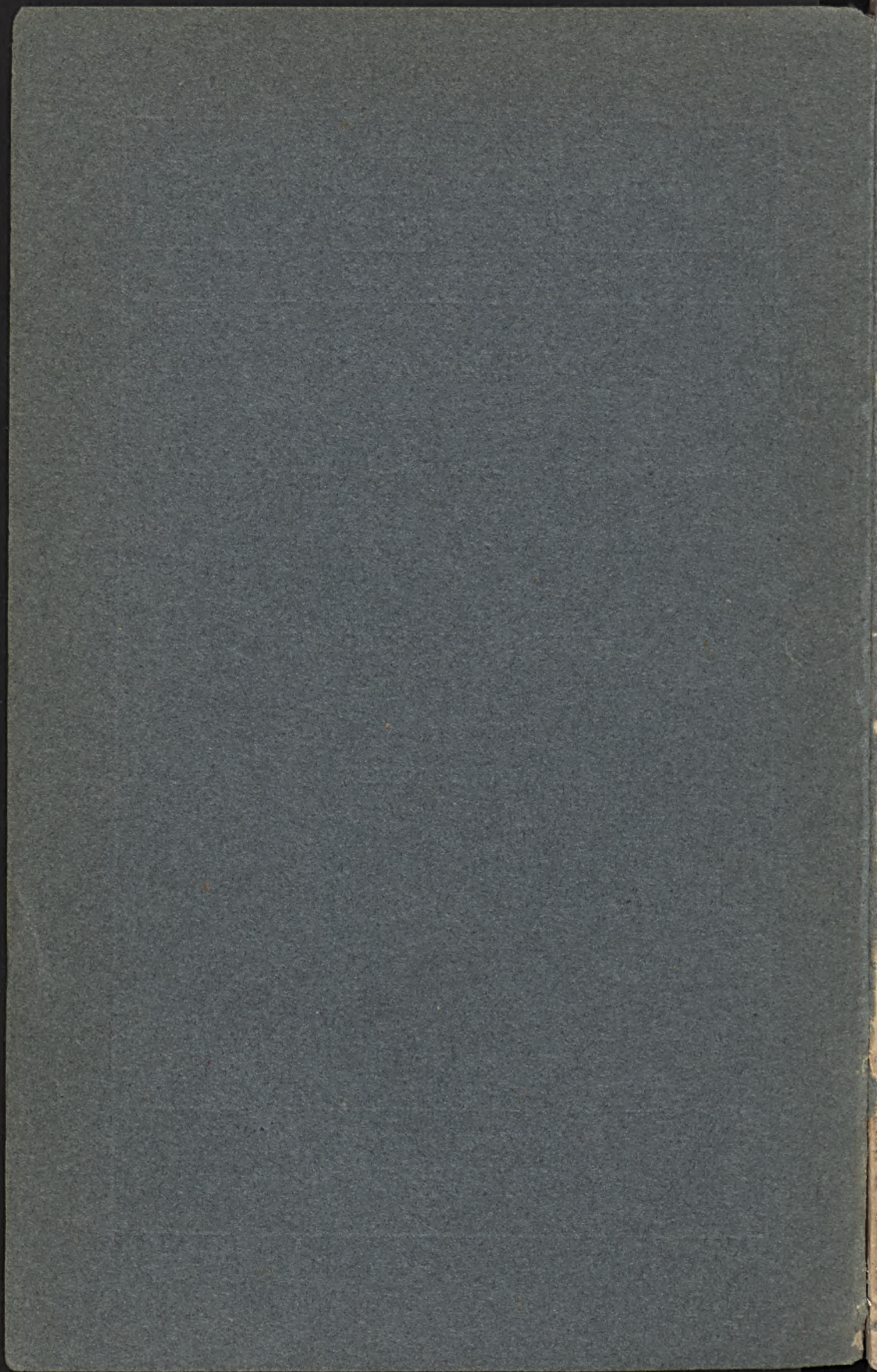
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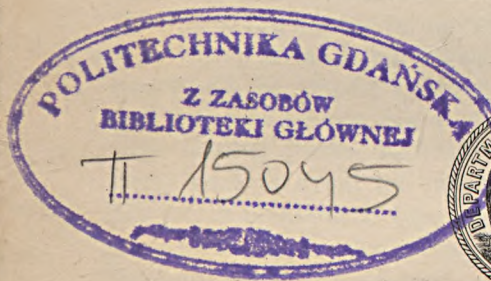
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BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY FOR 1914, WITH SUBJECT INDEX.

By JOHN M. NICKLES.

INTRODUCTION.



The bibliography of North American geology, including paleontology, petrology, and mineralogy, for the year 1914 follows the plan and arrangement of its immediate predecessors, the bibliographies for 1906-7, 1908, 1909, 1910, 1911, 1912, and 1913 (Bulletins 372, 409, 444, 495, 524, 545, and 584 of the U. S. Geological Survey). It includes publications bearing on the geology of the Continent of North America and adjoining islands; also Panama and the Hawaiian Islands. Papers by American writers on the geology of other parts of the world are not included. Textbooks and papers general in character by American authors are included; those by foreign authors are excluded unless they appear in American publications.

As heretofore, the papers, with full title and medium of publication and explanatory note when the title is not fully self-explanatory, are listed under the authors, arranged in alphabetic order. The author list is followed by an index to the literature listed. In this index the entries in one alphabet are of three kinds—first, subject, with various subdivisions, to enable the specialist to ascertain readily all the papers bearing on a particular subject or area; second, titles of papers, many of them abbreviated or inverted, under their leading words; and third, cross references, which have been freely used to avoid too much repetition. The subjects have been printed in black-faced type, the titles of papers and cross references in ordinary type. As it may not be always obvious which subject headings have been adopted, a classified scheme of those used immediately precedes the index.

Miss Isabel P. Evans has given efficient assistance in the work.

The bibliography of North American geology is comprised in the following bulletins of the United States Geological Survey: No. 127 (1732-1892); Nos. 188 and 189 (1892-1900); No. 301 (1901-1905); No. 372 (1906-7); No. 409 (1908); No. 444 (1909); No. 495 (1910); No. 524 (1911); No. 545 (1912); No. 584 (1913); and No. 617 (1914).



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CLASSIFIED SCHEME OF SUBJECT HEADINGS.

1. GENERAL.

Associations, meetings; Addresses; History; Philosophy; Biography; Bibliography; Educational; Text-books.

Classification; Nomenclature; Cartography; Technique; Field work; Surveys; Borings.

Geochemistry; Chemical analyses (list); Atmosphere; Radioactivity.

Experimental investigations; Miscellaneous.

2. REGIONAL.

The States of the Union, Alabama, etc.; the Provinces of Canada, Alberta, etc.; Greenland; Mexico; the countries of Central America; the West Indies, and the single islands; the Hawaiian Islands.

3. ECONOMIC..

Ore deposits, origin; Contact phenomena.

Gold; Placers; Black sands; Silver; Quicksilver; Nickel; Cobalt; Copper; Lead; Zinc; Iron; Magnetite; Manganese; Tin; Aluminum; Bauxite; Antimony; Bismuth; Tungsten; Wolframite; Vanadium; Uranium; Carnotite ores; Molybdenum; Molybdenite; Titanium; Rutile; Platinum; Iridium; Rhodium; Palladium; Cadmium; Monazite; Rare earths; Tantalum; Selenium; Tellurium; Zircon.

Coal; Anthracite; Coke; Peat; Lignite; Bituminous rock; Natural gas; Petroleum; Oil shales; Asphalt; Albertite; Gilsonite; Grahamite; Ozokerite.

Stone; Building stone; Granite; Bluestone; Limestone; Lime; Marble; Onyx; Sandstone; Clay; Kaolin; Bentonite; Fire clay; Ganister; Slate; Shale; Marl; Sand; Glass sand; Sand-lime brick; Gravel; Cement and cement materials; Concrete materials; Road materials; Trap; Steatite; Soapstone; Talc; Serpentine.

Precious stones; Diamonds; Sapphires; Turquoise; Tourmaline.

Abrasive materials; Corundum; Emery; Garnet; Diatomaceous earth; Tripoli; Volcanic ash; Millstones; Novaculite.

Asbestos; Feldspar; Mica; Quartz; Gypsum; Graphite; Fuller's earth; Infusorial earth; Magnesite; Mineral paint; Chromium; Chromite; Chromic iron ore; Fluorspar; Barite; Barytes; Strontium; Arsenic; Pyrite; Sulphur; Sulphate of soda; Cryolite; Phosphorus; Phosphate; Apatite; Potash; Alunite; Glauconite; Borax; Bromine; Salt; Natron deposits.

4. DYNAMIC AND STRUCTURAL.

Earth, genesis of; Earth, age of; Earth, interior of; Earth, temperature of.

Volcanism; Volcanoes; Earthquakes; Seismology; Seismographs; Mud volcanoes.

Isostasy; Orogeny; Changes of level.

Magmas; Intrusions; Dikes; Laccoliths; Metamorphism; Contact phenomena.

Deformation; Folding; Faulting; Unconformities.

Conglomerates; Concretions; Stalactites; Jointing; Cleavage.

Sedimentation; Denudation; Erosion; Caves; Sink holes; Erratic boulders; Weathering; Wind work; Dunes; Loess; Landslides.

Glaciers; Glacial erosion; Eskers; Kames; Moraines; Kettle holes.

Drainage changes.

5. PHYSIOGRAPHIC.

Geomorphy; Relief maps.

Valleys; Cirques; Deserts; Dunes; Deltas; Alluvial fans; Eskers; Kames; Mounds, natural; Natural bridges; Sink holes; Karsts.

Lakes; Swamps; Marshes; Everglades; Terraces; Beaches; Shore lines; Rivers; Meanders; Falls; Springs.

6. HISTORIC OR STRATIGRAPHIC.

Geologic history; Geologic time; Paleogeography; Paleogeographic maps; Paleoclimatology.

Geologic maps; Geologic formations described (list).

Pre-Cambrian; Paleozoic (undifferentiated); Cambrian; Ordovician; Silurian; Devonian; Carboniferous; Triassic; Jurassic; Cretaceous; Tertiary; Quaternary; Recent; Glacial geology; Glaciation; Glacial lakes; Ice ages.

7. PALEONTOLOGY.

Geographic distribution; Evolution; Restorations.

Vertebrata; Man, fossil; Mammalia; Aves; Reptilia; Amphibia; Pisces; Footprints, fossil.

Invertebrata; Arthropoda; Crustacea; Trilobita; Ostracoda; Insecta; Arachnida; Myriapoda.

Mollusca; Cephalopoda; Gastropoda; Pelecypoda.

Molluscoidea; Brachiopoda; Bryozoa; Vermes.

Echinodermata; Echinoidea; Asteroidea; Crinoidea; Cystoidea.

Cœlenterata; Anthozoa; Hydrozoa; Graptolites.

Protozoa; Spongida; Foraminifera.

Paleobotany; Diatoms.

Problematica.

8. PETROLOGY.

Rocks, origin; Rocks, structural features; Rocks described (list); Igneous and volcanic rocks; Rock-forming minerals; Lava; Oolite; Pebbles.

9. MINERALOGY.

Minerals described (list); Crystallography; Pseudomorphism; Paragenesis of minerals; Rock-forming minerals; Meteorites.

10. UNDERGROUND WATER.

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11. SOILS

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- Biwabik formation, Algonkian, Minnesota: Grout and Soper, 502.
- Black shale, Devonian, Tennessee: Wade, 1239.
- Black Creek formation, Cretaceous, South Carolina: Stephenson, 1129.
- Black Creek formation, Upper Cretaceous, South Carolina: Berry, 80.
- Black Hand formation, Carboniferous, Ohio and Kentucky: Morse and Foerste, 867.
- Blackstone series, pre-Cambrian, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Bloomsbury formation, Quebec: Hayes, 523.
- Blue Canyon formation, Carboniferous, California: Ferguson, 417.
- Bob limestone, Silurian, Tennessee: Drake, 366.
- Bob member, Silurian, Tennessee: Wade, 1239.
- Boggy shale, Pennsylvanian, Arkansas and Oklahoma: Smith, 1097.
- Boggy shale, Pennsylvanian, Oklahoma: Snider, 1113.
- Bohio conglomerate, Tertiary, Costa Rica: MacDonald, 788.
- Bolivar fire clay, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Bomoseen grit, Cambrian, New York: Cushing and Ruedemann, 296.
- Bonavista formation, Cambrian, Newfoundland: Van Ingen, 1222.
- Bonita sandstone, Jurassic?, California: Lawson, 724.
- Bonnetterre formation, Cambrian, Missouri: Lee, 727.
- Boone formation, Mississippian, Oklahoma: Snider, 1114.
- Boone limestone, Mississippian, Oklahoma: Smith, 1098.
- Boss Point formation, Pennsylvanian, Nova Scotia: Bell, 77.
- Bosworth formation, Cambrian, British Columbia: Allan, 5, 6.
- Boulder granite, Jurassic, British Columbia: Cam-sell, 197.
- Bowling Green limestone, Silurian, Illinois, Mis-souri: Savage, 1031.
- Bowling Green limestone, Silurian, Missouri: Keyes, 659.
- Boyle limestone, Devonian, Kentucky: Munn, 869.
- Bragdon formation, Carboniferous, California: Fer-guson, 416.
- Brainard terrane, Ordovician, Iowa: Keyes, 661.
- Brannon, Ordovician, Kentucky: Miller, 843.
- Brannon limestone, Ordovician, Kentucky: Foerste, 427.
- Brassfield formation, Silurian, Ohio and Indiana: Schuchert, 1054.
- Brassfield limestone, Silurian, Kentucky: Morse and Foerste, 867.

- Brassfield limestone, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Bretonian division, Cambrian, New Brunswick: Matthew, 816.
- Brewerville formation, Mississippian, Mississippi Valley: Weller, 1270.
- Brewerville sandstone, Mississippian, Illinois: Weller, 1269.
- Bridger formation, Tertiary, Colorado and Utah: Woodruff and Day, 1333.
- Bright Angel shale, Cambrian, Arizona: Hill, 539; Noble, 880.
- Brigus formation, Cambrian, Newfoundland: Van Ingen, 1222.
- Briones sandstone, Miocene, California: Lawson, 724.
- Broadback series, pre-Cambrian, Quebec: Cooke, 275.
- Bromley member, Ordovician, Kentucky: Foerste, 427.
- Brooklyn formation, Carboniferous, British Columbia: LeRoy, 738.
- Brown Mead formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Browns Mountain group, Ordovician, Nova Scotia: Williams, 1300.
- Brownsport formation, Silurian, Tennessee: Drake, 366.
- Brownsport group, Silurian, Tennessee: Wade, 1239.
- Brownstown sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Bruce series, pre-Cambrian, Ontario: Collins, 270.
- Brunswick shale, Triassic, New Jersey: Bayley *et al.*, 66.
- Brush Creek formation, Carboniferous, West Virginia: Hennen and Reger, 527.
- Buckingham series, pre-Cambrian, Quebec: Wilson, 1315.
- Buena Vista member, Carboniferous, Ohio and Kentucky: Morse and Foerste, 867.
- Buffalo sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Bulkley eruptives, Cretaceous or Tertiary, British Columbia: Malloch, 802.
- Burke formation, Algonkian, Idaho and Montana: Calkins and Jones, 192.
- Burlington limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Burlington terrane, Carboniferous, Iowa: Keyes, 661.
- Burnett formation, Tertiary, Washington: Daniels, 308.
- Burton formation, Cambrian, British Columbia: Burling, 157; Schofield, 1041, 1043.
- Bushberg sandstone, Mississippian, Mississippi Valley: Weller, 1270.
- Buxton formation, Carboniferous, Oklahoma: Buttram, 178.
- Byram gneiss, pre-Cambrian, New Jersey: Bayley *et al.*, 66.
- Cabot Head member, Silurian, Ontario: Williams, 1301, 1303.
- Cabots Head shale member, Silurian, New York and Ontario: Schuchert, 1054.
- Cache Creek group, Carboniferous, British Columbia: Drysdale, 369.
- Cache Creek series, Carboniferous, British Columbia: Bateman, 61.
- Cache Lake beds, Tertiary (Pliocene), California: Dickerson, 340.
- Cahil sandstone, Jurassic?, California: Lawson, 724.
- Calaveras group, Carboniferous, California: Ferguson, 417.
- Calera limestone member, Jurassic?, California, Lawson, 724.
- Callaway limestone, Devonian, Missouri: Branson, 118.
- Cambric period, Lake Superior region: Keyes, 662.
- Cambridge slate, Massachusetts: Sayles, 1034.
- Cambridge slates, Permian, Massachusetts: Clapp, 222.
- Camden chert, Devonian, Tennessee: Wade, 1239.
- Camillus beds, Silurian, New York: Hopkins, 571.
- Camillus shale, Silurian, New York: Houghton, 577; Luther, 775.
- Campbells Creek limestone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Campus formation, Pleistocene, California: Lawson, 724.
- Canajoharie shale, Ordovician, New York: Cushing and Ruedemann, 296.
- Cannelton limestone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Cannonball marine member, Tertiary, North Dakota: Lloyd, 758.
- Cannonball member, Tertiary: Knowlton, 692.
- Cape Ann granite, Mississippian or Pennsylvanian, Massachusetts: Clapp, 222.
- Cape Horn formation, Carboniferous, California: Ferguson, 417.
- Carbonado formation, Tertiary, Washington: Daniels, 308.
- Carbondale formation, Pennsylvanian, Illinois: Blatchley, 98, 100; Hinds, 543.
- Cardiff shale, Devonian, New York: Houghton, 577; Luther, 775.
- Cardiff shales, Devonian, New York: Hopkins, 571.
- Cardium sandstones, Cretaceous, Alberta: Dowling, 362, 364.
- Caribbean limestone, Tertiary, Costa Rica: MacDonald, 788.
- Carlile shale, Cretaceous, Wyoming: Barnett, 40.
- Carolina gneiss, pre-Cambrian, Georgia: Hopkins, 568.
- Carrizo formation, Algonkian?, Texas: Richardson, 999.
- Cashqua shale, Devonian, New York: Houghton, 577; Luther, 775.
- Casper formation, Carboniferous, Wyoming: Barnett, 41.
- Cassville plant shale, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Castile gypsum, Permian, Texas: Richardson, 999.
- Catahoula sandstone, Tertiary, Texas: Deussen, 336.
- Catacraft formation, Silurian, New York and Ontario: Schuchert, 1054.
- Catacraft formation, Silurian, Ontario: Williams, 1301, 1303.
- Cathedral formation, Cambrian, British Columbia: Allan, 5, 6.
- Catskill series, Devonian, West Virginia: Hennen and Reger, 527.

- Cedar volcanic series, Tertiary (Oligocene), British Columbia: Camsell, 197.
- Cedar District formation, Cretaceous, British Columbia: Clapp, 225.
- Cedar Valley limestones, Devonian, Iowa: Keyes, 657.
- Chancellor formation, Cambrian, British Columbia: Allan, 5, 6.
- Channahon limestone, Silurian, Illinois: Savage, 1031.
- Chanute shale, Pennsylvanian, Iowa: Tilton, 1170.
- Chapman sandstone, Devonian, Maine: Clarke, 244.
- Charleton formation, Ordovician, Anticosti Island: Twenhofel, 1190.
- Chattanooga shale, Devonian, Kentucky: Munn, 869.
- Chattanooga shale, Devonian, Tennessee: Drake, 366; Wade, 1239.
- Chattanooga terrane, Carboniferous, Iowa: Keyes, 661.
- Chehalis formation, Eocene, California and Oregon: Arnold and Hannibal, 22.
- Chemung series, Devonian, West Virginia: Hennen and Reger, 527.
- Chemungan series: Keyes, 661.
- Cherokee formation, Pennsylvanian, Oklahoma: Smith, 1095.
- Cherokee shale, Carboniferous, Missouri: Greene, 494.
- Cherokee terrane, Carboniferous, Iowa: Keyes, 661.
- Cherryvale shale, Pennsylvanian, Iowa: Tilton, 1170.
- Cherry Valley (Agoniatites) limestone, Devonian, New York: Hopkins, 571.
- Chester group, Carboniferous, Kentucky: Bryant, 147.
- Chester group, Mississippian, Illinois: Blatchley, 100; Weller, 1269.
- Chester group, Mississippian, Kentucky: Bryant, 147.
- Chester group, Mississippian, Mississippi Valley: Weller, 1270.
- Chester Valley limestone, Cambro-Ordovician, Pennsylvania: Bliss and Jonas, 101.
- Chickamauga limestone, Ordovician, Virginia: Stose, 1152.
- Chickies formation, Cambrian, Pennsylvania: Bliss and Jonas, 101.
- Chico, Cretaceous, California: Dickerson, 340.
- Chico formation, Cretaceous, California: Arnold and Garfias, 21; Lawson, 724; Pack and English, 903.
- Chico group, Cretaceous, California: Dickerson, 341.
- Chico group, Cretaceous, Oregon: Winchell, 1320.
- Chicotte formation, Silurian, Anticosti Island: Twenhofel, 1190.
- Chilton sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Chimneyhill formation, Oklahoma: Reeds, 986.
- Chipola marl, Tertiary, Florida: Vaughan and Cooke, 1235.
- Chisna formation, Carboniferous, Alaska: Moffit, 854.
- Chouteau limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Chouteau terrane, Carboniferous, Iowa: Keyes, 661.
- Chugwater formation, Triassic?, Wyoming: Barnett, 41.
- Cincinnati group, Ordovician, Ontario: Williams, 1301.
- Cisco formation, Carboniferous, Texas: Udden, 1202.
- Claggett formation, Cretaceous, Montana: Bowen, 103, 104, 105; Stebinger, 1126.
- Claggett shales, Cretaceous, Alberta: Dowling, 362, 364.
- Claiborne group, Eocene, Georgia: Berry, 80.
- Claiborne group, Eocene, Texas: Deussen, 336.
- Clallam formation, Oligocene and Miocene, Washington: Lupton, 774.
- Claremont shale, Miocene, California: Lawson, 724.
- Clarenceville series, Ordovician, Newfoundland: Van Ingen, 1222.
- Clarion fire clay, Carboniferous, West Virginia: Hennen and Reger, 527.
- Clarion sandstone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Clark Fork beds, Tertiary, Wyoming: Granger, 485.
- Clarksburg limestone, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Clarno formation, Eocene, Oregon: Collier, 266.
- Clear Fork formation, Carboniferous, Texas: Case, 208.
- Clermont terrane, Ordovician, Iowa: Keyes, 661.
- Cleveland shale, Devonian, Ohio: Burroughs, 160.
- Clinch sandstone, Silurian, Virginia: Stose, 1152.
- Clinton formation, Silurian, Michigan: Smith, 1108.
- Clinton formation, Silurian, New York: Schuchert, 1054.
- Clinton formation, Silurian, Ontario: Williams, 1303.
- Clinton-Rochester shales, Silurian, New York: Hopkins, 571.
- Clore formation, Mississippian, Illinois: Weller, 1269.
- Clore formation, Mississippian, Mississippi Valley: Weller, 1270.
- "Cloverly" formation, Cretaceous, Wyoming: Barnett, 39, 41; Hewett, 534.
- Clyburn formation, pre-Cambrian?, Cape Breton Island: Wright, 1350.
- Coalburg sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Cobalt conglomerate, pre-Cambrian, Canada: Coleman, 262.
- Cobalt series, pre-Cambrian, Ontario: Burrows and Hopkins, 164; Collins, 269.
- Cobalt series, pre-Cambrian, Ontario: Miller and Knight, 848.
- Cobalt series, pre-Cambrian, Quebec: Wilson, 1313, 1314.
- Cobequid group, Nova Scotia: Bell, 77.
- Cobleskill dolomite, Silurian, New York: Hopkins, 571.
- Cobleskill limestone, Silurian, New York: Houghton, 577.
- Cobleskill waterlime, Silurian, New York: Luther, 775.
- Coconino sandstone, Carboniferous (Pennsylvanian), Arizona: Hill, 539; Noble, 880.
- Coffee sand member, Cretaceous, Gulf States: Stephenson, 1128.
- Coggan terrane, Devonian, Iowa: Keyes, 661.
- Coldbrook formation, Cambrian?, Quebec: Hayes, 523.

- Coldbrookian terrane, Cambrian, New Brunswick: Matthew, 816.
- Coldwater formation, Mississippian, Michigan: Cook, 273.
- Coldwater group, Tertiary, British Columbia: Drysdale, 369.
- Coldwater series, Tertiary (Oligocene), British Columbia: Camsell, 197.
- Coldwater series, Oligocene, British Columbia: Rose, 1016.
- Coldwater shale, Mississippian, Michigan: Smith, 1108; Sherzer, 1081.
- Colesburg terrane, Silurian, Iowa: Keyes, 661.
- Collingwood formation, Ordovician, Ontario: Raymond, 980.
- Coralville terrane, Devonian, Iowa: Keyes, 661.
- Coloradan series: Keyes, 661.
- Colorado formation, Cretaceous, Wyoming: Hewett, 534.
- Colorado shale, Cretaceous, Montana: Bowen, 103, 104, 105.
- Colquitz gneiss, British Columbia: Clapp, 227.
- Colquitz gneiss, Jurassic, British Columbia: Clapp, 223; Clapp and Cooke, 230.
- Columbia lava, Miocene, Oregon: Collier, 266.
- Colwood sands and gravels, Pleistocene, British Columbia: Clapp, 223, 225, 227.
- Comanchan series: Keyes, 661.
- Comanche series, Cretaceous, Texas: Richardson, 999.
- Conemaugh series, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Connellsville sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Connoquenessing (Lower) sandstone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Connoquenessing (Upper) sandstone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Cook Mountain formation, Eocene, Texas: Deussen, 336.
- Cooper marl, Eocene, South Carolina: Rogers, 1013.
- Cooper marl, Tertiary, South Carolina: Stephenson, 1129.
- Copley meta-andesite, Devonian or older, California: Ferguson, 416.
- Coppermine series, Canada: Sandberg, 1027.
- Coralville limestone, Devonian, Iowa: Keyes, 657.
- Cordova sands and gravels, Pleistocene, British Columbia: Clapp, 223, 227.
- Cornishville limestone, Ordovician, Kentucky: Foerste, 427.
- Cornishville member, Ordovician, Kentucky: Miller, 843.
- Cornwall ("Pequanac") shale, Devonian, New Jersey: Bayley *et al.*, 66.
- Corral Creek formation, pre-Cambrian, Alberta: Allan, 5.
- Corral Creek formation, pre-Cambrian, British Columbia: Allan, 6.
- Corryville-Arnheim, Ordovician, Indiana: Cumings and Galloway, 295.
- Corson terrane, pre-Cambrian, Iowa: Keyes, 661.
- Cortlandt series, New York: Fettke, 420.
- Cougar formation, Beltian, British Columbia: Daly, 306.
- Coutchiching, pre-Cambrian, Lake Superior region: Leith, 732.
- Coutchiching series, pre-Cambrian, Ontario: Lawson, 721.
- Coutchichingan series, pre-Cambrian, Lake Superior region: Keyes, 662.
- Cowaselon clay, Quaternary, New York: Smith, 1094.
- Crab Orchard shales, Silurian, Kentucky: Morse and Foerste, 867.
- Craghead Creek shales, Devonian, Missouri: Branson, 118.
- Cranberry formation, Cretaceous, British Columbia: Clapp, 225.
- Crescent formation, Eocene, Washington: Lupton, 774.
- Creston formation, pre-Cambrian, British Columbia: Schofield, 1039, 1043.
- Creston red shale, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Crill chalk, Cretaceous, Iowa: Keyes, 665.
- Crill terrane, Cretaceous, Iowa: Keyes, 661.
- Croixan series: Keyes, 661.
- Croixan series, Cambrian, Lake Superior region: Keyes, 662.
- Croton Falls hornblendite, New York: Fettke, 420.
- Crownsnest volcanics, Cretaceous, Alberta: MacKenzie, 792, 794.
- Cumberland quartzite, pre-Cambrian, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Curdsville member, Ordovician, Kentucky: Foerste, 427.
- Cusseta sand member, Upper Cretaceous, Georgia: Berry, 80.
- Cutler formation, Permian?, Colorado: Cross and Larsen, 200.
- Cuyahoga formation, Carboniferous, Ohio and Kentucky: Morse and Foerste, 867.
- Cynthiana formation, Ordovician, Kentucky: Foerste, 427; Miller, 843.
- Cypress sandstone, Mississippian, Illinois: Blatchley, 100.
- Cyrene member, Silurian, Illinois: Savage, 1031.
- Dakota formation, Cretaceous, Alberta: Dowling, 362, 364.
- Dakota (?) formation, Cretaceous, Alberta: MacKenzie, 792, 794.
- Dakota formation, Cretaceous, New Mexico: Winchester, 1324.
- Dakota sandstone, Cretaceous, Minnesota: Grout and Soper, 502.
- Dakota sandstone, Cretaceous, New Mexico: Kirk, 683.
- Dakota sandstone, Cretaceous, Utah: Lupton, 773.
- Dakota sandstone, Cretaceous, Wyoming: Barnett, 40.
- Dakotan series: Keyes, 661.
- Dalhousie formation, Devonian, New Brunswick: Clarke, 244.
- Dallas deposits, Pleistocene, Iowa: Tilton, 1171.
- Davis formation, Cambrian, Missouri: Lee, 727.
- Decatur limestone, Silurian, Tennessee: Wade, 1239.
- De Cew limestone, Silurian, Ontario: Williams, 1303.

- De Cew member, Silurian, New York: Schuchert, 1054.
- Decker limestone, Silurian, New Jersey: Bayley *et al.*, 66.
- Decorah shale, Ordovician, Minnesota: Grout and Soper, 502.
- Decorah terrane, Ordovician, Iowa: Keyes, 661.
- Decota sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- De Courcy formation, Cretaceous, British Columbia: Clapp, 225.
- Dedham granite, Massachusetts: Loughlin and Hechinger, 767.
- Deep Kill shale, Ordovician, New York: Cushing and Ruedemann, 296.
- De Kalb limestone, Pennsylvanian, Iowa: Tilton, 1170.
- Dekkas andesite, Triassic, California: Boyle, 113.
- Delaware Mountain formation, Permian, Texas: Richardson, 999.
- Dennys formation, Silurian, Maine: Bastin and Williams, 60.
- Derby formation, Cambrian, Missouri: Lee, 727.
- Des Moines series: Keyes, 661.
- Detroit River series, Devonian, Michigan: Cook, 273.
- Detroit River series, Silurian, Michigan: Sherzer, 1081; Smith, 1108.
- Dewey limestone, Carboniferous, Oklahoma: Buttram, 178.
- Dewitt formation, Tertiary, Texas: Deussen, 336.
- Diamond Hill felsite, Carboniferous, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Diamond Rock quartzite, Cambrian, New York: Cushing and Ruedemann, 296.
- Dighton conglomerate, Permian, Massachusetts: Loughlin and Hechinger, 767.
- Dixon limestone, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Dockum formation, Triassic, Texas: Case, 208.
- Dodge terrane, Tertiary, Iowa: Keyes, 661.
- Doerun formation, Cambrian, Missouri: Lee, 727.
- Dolores formation, Triassic, Colorado: Cross and Larsen, 290.
- Doré series, pre-Cambrian, Ontario: Miller and Knight, 848.
- Dothan formation, Jurassic, Oregon: Diller, 352; Winchell, 1320.
- Double Mountain formation, Permian, Texas: Case, 208.
- Dovre moraine, Pleistocene, North Dakota: Simpson, 1090.
- Dox sandstone, Algonkian, Arizona: Noble, 880.
- Dresbach formation, Upper Cambrian (St. Croixan), Upper Mississippi Valley: Walcott, 1244.
- Dresbach sandstone, Cambrian, Minnesota: Grout and Soper, 502.
- Dresbach terrane, Cambrian, Iowa: Keyes, 661.
- Dubuque terrane, Quaternary, Iowa: Keyes, 661.
- Dundee formation, Devonian, Michigan: Sherzer, 1081.
- Dundee limestone, Devonian, Michigan: Cook, 273; Smith, 1108.
- Dunkard series, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Dunkirk shale, Devonian, New York: Houghton, 577.
- Duplin marl, Miocene, South Carolina: Rogers, 1013.
- Eagle formation, Cretaceous, Montana: Bowen, 103.
- Eagle granodiorite, Jurassic, British Columbia: Camsell, 197.
- Eagle limestone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Eagle sandstone, Cretaceous, Montana: Bowen, 104, 105.
- Eastern Head formation, Ordovician, Newfoundland: Van Ingen, 1222.
- East Greenwich granite group, Rhode Island: Loughlin and Hechinger, 767.
- East Lynn sandstone, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Eastport formation, Silurian, Maine: Bastin and Williams, 60.
- East Wellington sandstone, Cretaceous, British Columbia: Clapp, 225.
- Eau Claire formation, Upper Cambrian (St. Croixan), Upper Mississippi Valley: Walcott, 1244.
- Eddy Hill grit, Cambrian, New York: Cushing and Ruedemann, 296.
- Eden formation, Ordovician, Kentucky: Foerste, 427; Miller, 843.
- Eden group, Ordovician, Indiana: Cumings and Galloway, 295.
- Edgewood formation, Silurian, Illinois, Missouri: Savage, 1031.
- Edisto marl, Miocene, South Carolina: Rogers, 1013.
- Edmonton formation, Cretaceous, Canada: Brown, 133.
- Edmonton series, Cretaceous, Alberta: Dowling, 362, 364.
- Edmunds formation, Silurian, Maine: Bastin and Williams, 60.
- Elbert formation, Devonian?, Colorado: Cross and Larsen, 290.
- Eldon formation, Cambrian, British Columbia: Allan, 5, 6.
- Elgin sandstone, Carboniferous, Oklahoma: Buttram, 178.
- Elgin terrane, Ordovician, Iowa: Keyes, 661.
- Elk fire clay, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Elk Lick limestone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Elkhorn beds, Ordovician, Indiana: Shideler, 1082.
- Elko formation, Ordovician and Silurian?, British Columbia: Schofield, 1041.
- Elko formation, Silurian, Ordovician, or Cambrian, British Columbia: Schofield, 1043.
- Elliott Cove formation, Cambrian, Newfoundland: Van Ingen, 1222.
- Ellis formation, Jurassic, Montana: Bowen, 104.
- Ellis Bay formation, Ordovician, Anticosti Island: Twenhofel, 1190.
- Elm Point limestone, Devonian, Manitoba: Kindle, 676.
- El Paso limestone, Ordovician, Texas: Richardson, 999.
- Elysian moraine, Pleistocene, North Dakota: Simpson, 1090.
- Eminence formation, Cambrian, Missouri: Lee, 727.
- English Head formation, Ordovician, Anticosti Island: Twenhofel, 1190.



- Eparchæan interval, pre-Cambrian, Lake Superior region: Leith, 732.
- Epicene series: Keyes, 661.
- Erian series: Keyes, 661.
- Esmeralda formation, Tertiary, Nevada: Buwalda, 183.
- Essex limestone, Silurian, Illinois: Savage, 1031.
- Etchegoin group, Neocene, California: Anderson and Martin, 18.
- Etcheminian, Cambrian, Quebec: Hayes, 523.
- Etcheminian terrane, Cambrian, New Brunswick: Matthew, 816.
- Etheline volcanics, Tertiary, British Columbia: MacKenzie, 793.
- Eutaw formation, Cretaceous, Gulf States: Stephenson, 1128.
- Eutaw formation, Cretaceous, Tennessee: Drake, 366.
- Eutaw formation, Upper Cretaceous, Georgia: Berry, 80.
- Evanston formation, Cretaceous or Tertiary, Wyoming: Schultz, 1058.
- Ewing limestone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Extension formation, Cretaceous, British Columbia: Clapp, 225.
- Fairview formation, Cambrian, British Columbia: Allan, 5, 6.
- Farnham formation, Ordovician, Quebec: Dresser, 367.
- Faulconer limestone, Ordovician, Kentucky: Foerste, 427.
- Faulconer member, Ordovician, Kentucky: Miller, 843.
- Fayette terrane, Devonian, Iowa: Keyes, 661.
- Fayetteville formation, Mississippian, Oklahoma: Smith, 1098.
- Fayetteville shale, Mississippian, Oklahoma: Snider, 1114.
- Fergus Falls moraine, Pleistocene, North Dakota: Simpson, 1090.
- Fernando formation, Miocene-Pliocene, California: Arnold and Garfias, 21.
- Fern Glen formation, Mississippian, Mississippi Valley: Weller, 1270.
- Fernie formation, Jurassic, Alberta: MacKenzie, 792, 794.
- Fernie shale, Jurassic, Alberta: Allan, 5.
- Fernie shales, Jurassic, Alberta: Dowling, 362, 364.
- Fernvale formation, Ordovician, Tennessee: Drake, 366; Wade, 1239.
- Ferron sandstone member, Cretaceous, Utah: Lupton, 773.
- Fiddler's Green limestone, Silurian, New York: Hopkins, 571.
- Flanagan formation, Ordovician, Kentucky: Miller, 843.
- Flat Rock dolomite, Silurian, Michigan: Sherzer, 1081.
- Flat Rock dolomite, Silurian, Ontario: Stauffer, 1123.
- Fleming clay, Miocene, Texas: Deussen, 336.
- Forbes terrane, Carboniferous, Iowa: Keyes, 661.
- Fordham gneiss, pre-Cambrian, New York: Berkeley and Healey, 79; Fettke, 420; Fuller, 441.
- Forelle(?) limestone, Carboniferous, Wyoming: Barnett, 41.
- Fort Payne chert, Mississippian, Tennessee: Drake, 366; Wade, 1239.
- Fort Scott limestone, Pennsylvanian, Oklahoma: Smith, 1098.
- Fort Union formation, Saskatchewan: Rose, 1017.
- Fort Union formation, Eocene, North Dakota: Leonard, 737.
- Fort Union formation, Eocene, Wyoming: Hewett, 534.
- Fort Union formation, Tertiary, Montana: Bauer, 64; Bowen, 105.
- Fort Union formation, Tertiary, North Dakota: Lloyd, 758.
- Fort Union formation, Tertiary, South and North Dakota: Calvert *et al.*, 193.
- Fort Union formation, Tertiary, Wyoming: Barnett, 41.
- Fox Hills formation, Cretaceous: Brown, 133; Knowlton, 692.
- Fox Hills formation, Cretaceous, Wyoming: Barnett, 39.
- Fox Hills sandstone, Cretaceous: Stanton, 1122.
- Fox Hills sandstone, Cretaceous, North Dakota: Leonard, 737; Lloyd, 758.
- Fox Hills sandstone, Cretaceous, South Dakota: Calvert *et al.*, 193.
- Fox Hills sandstone, Cretaceous, Wyoming: Barnett, 40.
- Fox Hills(?) sandstone, Cretaceous, Wyoming: Barnett, 41.
- Franciscan, Jurassic, California: Dickerson, 340.
- Franciscan formation, Jurassic?, California: Pack and English, 903.
- Franciscan group, Jurassic?, California: Lawson, 724.
- Franconia formation, Upper Cambrian (St. Croixan), Upper Mississippi Valley: Walcott, 1244.
- Franconia sandstone, Cambrian, Minnesota: Grout and Soper, 502.
- Franey granite, Cape Breton Island: Wright, 1350.
- Franklin limestone, pre-Cambrian, New Jersey: Bayley *et al.*, 66.
- Fredericksburg group, Cretaceous, Texas: Richardson, 999.
- Freeport (Lower) limestone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Freeport (Lower) sandstone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Freeport (Upper) limestone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Freeport (Upper) sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Friar's Hill gravels and marls, Pleistocene, Antigua: Brown, 130.
- Frontier formation, Cretaceous, Wyoming: Schultz, 1058.
- Fulton shale, Ordovician, Kentucky: Foerste, 427.
- Fuson shale, Cretaceous, Wyoming: Barnett, 40.
- Gabriola formation, Cretaceous, British Columbia: Clapp, 225.
- Galena dolomite, Ordovician, Illinois: Cox, 278.
- Galena formation, Ordovician, Illinois: Cady, 185.
- Galena limestone, Ordovician, Minnesota: Grout and Soper, 502.

- Galena terrane, Ordovician, Iowa: Keyes, 661.
- Galesburg shale, Pennsylvanian, Iowa: Tilton, 1070.
- Galice formation, Jurassic, Oregon: Diller, 352; Winchell, 1320.
- Galton series, pre-Cambrian, British Columbia: Burling, 157; Schofield, 1043.
- Gamachian series, Ordovician, Anticosti Island: Twenhofel, 1190.
- Gardeau flags and shales, Devonian, New York: Luther, 775.
- Gardeau shale, Devonian, New York: Houghton, 577.
- Gardiners clay, Quaternary, New York: Fuller, 441.
- Garrard sandstone, Ordovician, Kentucky: Miller, 843.
- Gasconade formation, Cambrian, Missouri: Lee, 727.
- Gasport limestone, Silurian, Ontario: Williams, 1303.
- Gasport member, Silurian, New York: Schuchert, 1054.
- Gateway formation, pre-Cambrian, British Columbia: Schofield, 1040, 1043.
- Gatun formation, Tertiary, Costa Rica: MacDonald, 788.
- Gavilan limestone, pre-Franciscan (Mesozoic), California: Lawson, 724.
- Gebo formation, Cretaceous, Wyoming: Hewett, 534.
- Genesee beds, Devonian, New York: Houghton, 577.
- Genesee black shale, Devonian, New York: Luther, 775.
- Genundewa limestone, Devonian, New York: Houghton, 577; Luther, 775.
- Georgian series: Keyes, 661.
- Gilboy sandstone, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Giles formation, Devonian, Virginia: Stose, 1152.
- Glacier division, Beltian, British Columbia: Daly, 306.
- Gladeville sandstone, Pennsylvanian, Virginia: Butts, 179, 180.
- Glen Park limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Glens Falls formation, Ordovician, New York: Raymond, 980.
- Glens Falls limestone, Ordovician, New York: Cushing and Ruedemann, 296.
- Glenwood terrane, Ordovician, Iowa: Keyes, 661.
- Goldenville formation, pre-Cambrian, Nova Scotia: Faribault, 405.
- Goodsir formation, Ordovician, British Columbia: Allan, 6.
- Goodsir shale, Ordovician, British Columbia: Allan, 5.
- Gower limestone, Silurian, Iowa: Savage, 1031.
- Goweran series: Keyes, 661.
- Grafton sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Grainger shale, Mississippian, Virginia: Butts, 179.
- Grand Canyon series, Algonkian, Arizona: Noble, 880.
- Grand Rapids (Lower), Mississippian, Michigan: Cook, 273.
- Grand Rapids (Lower) formation, Mississippian, Michigan: Smith, 1108.
- Grand Rapids (Upper) formation, Mississippian, Michigan: Smith, 1108.
- Grandfield conglomerate, Tertiary or Quaternary, Oklahoma: Munn, 869.
- Graneros shale, Cretaceous, Wyoming: Barnett, 40.
- Grants Mills granite, Devonian, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Grassy shale, Carboniferous, Iowa: Keyes, 661.
- Grassy terrane, Carboniferous, Iowa: Keyes, 661.
- Gravel Head formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Gray Bull beds, Tertiary, Wyoming: Granger, 485.
- Greenbrier limestone, Carboniferous, Virginia: Stose, 1152.
- Greenbrier limestone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Greendale member, Ordovician, Kentucky: Foerste, 427.
- Greenfield dolomite, Silurian, Michigan: Sherzer, 1081.
- Greenfield dolomite, Silurian, Ontario: Stauffer, 1123.
- Greenhorn formation, Cretaceous, Wyoming: Barnett, 40.
- Green Pond conglomerate, Silurian, New Jersey: Bayley *et al.*, 66.
- Green River formation, Eocene, Wyoming: Schultz, 1058.
- Green River formation, Tertiary, Colorado and Utah: Woodruff and Day, 1333.
- Grenville limestone, pre-Cambrian, Quebec: Wilson, 1315.
- Grenville series, pre-Cambrian, Canada: Coleman, 262.
- Grenville series, pre-Cambrian, New York: Cushing and Ruedemann, 296; Miller, 850.
- Grenville series, pre-Cambrian, Ontario: Coleman, 264; Miller and Knight, 848.
- Grenville series, pre-Cambrian, Quebec: Wilson, 1314.
- Grimsby member, Silurian, Ontario: Williams, 1303.
- Guelph formation, Silurian, Ontario: Williams, 1303.
- Gunflint formation, Algonkian, Minnesota: Grout and Soper, 502.
- Gun River formation, Silurian, Anticosti: Schuchert, 1054; Twenhofel, 1190.
- Gwinn series, pre-Cambrian, Michigan: Allen, 14; Allen and Barrett, 15.
- Haida formation, Cretaceous, British Columbia: MacKenzie, 793.
- Haida member, Jurassic, British Columbia: Clapp, 227.
- Haines granite, post-Triassic, Oregon: Grant and Cady, 487.
- Hakatai shale, Algonkian, Arizona: Noble, 880.
- Halifax formation, pre-Cambrian, Nova Scotia: Faribault, 405.
- Hambre sandstone, Miocene, California: Lawson, 724.
- Hamburg oolite, Mississippian, Mississippi Valley: Weller, 1270.
- Hamilton formation, Devonian, Ontario: Williams, 1302.

- Hamilton limestone, Devonian, Illinois: Cady, 185; Ekblaw, 385.
- Hancock limestone, Devonian, Virginia: Stose, 1152.
- Hanford formation, Cambrian, Newfoundland: Van Ingen, 1222.
- Hannibal sandstone, Mississippian, Mississippi Valley: Weller, 1270.
- Hannibal terrace, Carboniferous, Iowa: Keyes, 661.
- Hanover shale, Devonian, New York: Houghton, 577.
- Harbor Hill moraine, Quaternary, New York: Fuller, 441.
- Hardin sandstone, Devonian, Tennessee: Wade, 1239.
- Hardin sandstone member, Devonian, Tennessee: Drake, 366.
- Hardman fire clay, Carboniferous, West Virginia: Hennen and Reger, 527.
- Hardyston quartzite, Cambrian, New Jersey: Bayley *et al.*, 66.
- Harlan sandstone, Pennsylvanian, Virginia: Butts, 179, 180.
- Harmon, Ordovician, Indiana: Cumings and Gallo-way, 295.
- Harmon Hill gneiss, pre-Cambrian, Vermont: Gordon, 476.
- Harrison granodiorite gneiss, New York: Fettke, 420.
- Hartshorne formation, Pennsylvanian, Arkansas and Oklahoma: Smith, 1097.
- Hartshorne sandstone, Pennsylvania, Oklahoma: Snider, 1113.
- Hartwick terrane, Silurian, Iowa: Keyes, 661.
- Haslam formation, Cretaceous, British Columbia: Clapp, 225.
- Hastings series, pre-Cambrian, Ontario: Miller and Knight, 848.
- Hatch shales and flags, Devonian, New York: Luther, 775.
- Hawarden shales, Cretaceous, Iowa: Keyes, 655.
- Hawarden terrane, Cretaceous, Iowa: Keyes, 661.
- Hawthorn formation, Tertiary, Florida: Vaughan and Cooke, 1235.
- Hazelton group, Jurassic, British Columbia: McConnell, 781; Malloch, 802.
- Hector formation, pre-Cambrian, British Columbia: Allan, 6.
- Hector formation, pre-Cambrian, Alberta: Allan, 5.
- Helderbergian limestone, Devonian, New York: Hopkins, 571.
- Hell Creek formation, Cretaceous: Brown, 133.
- Hempstead gravel, Quaternary, New York: Fuller, 441.
- Henrietta formation, Carboniferous, Missouri: Greene, 494.
- Henrietta terrane, Carboniferous, Iowa: Keyes, 661.
- Hercules shale member, Miocene, California: Lawson, 724.
- Hermansville limestone, Ordovician, Michigan: Smith, 1108.
- Hermitage formation, Ordovician, Tennessee: Drake, 366.
- Hermosa formation, Pennsylvanian, Colorado: Cross and Larsen, 290.
- Herod gravel member, Quaternary, New York: Fuller, 441.
- Hersey red shale member, Silurian, Maine: Bastin, and Williams, 60.
- Hertha limestone, Pennsylvanian, Iowa: Tilton, 1070.
- High Falls shale, New York: Brown, 140.
- Hilliard formation, Cretaceous, Wyoming: Schultz, 1058.
- Hinckly terrane, Cambrian, Iowa: Keyes, 661.
- Hoboken serpentinite, pre-Cambrian, New York: Berkey and Healey, 79.
- Hodge's Hill calcareous sandstone, Oligocene, Antigua: Brown, 130.
- Homewood sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Honaker limestone, Cambrian, Virginia: Stose, 1152.
- Honna formation, Cretaceous, British Columbia: MacKenzie, 793.
- Honna member, Jurassic, British Columbia: Clapp, 227.
- Hopkinton dolomite, Silurian, Iowa: Savage, 1031.
- Horsethief sandstone, Cretaceous, Montana: Stebinger, 1125, 1126.
- Horsetown group, Cretaceous, Oregon: Winchell, 1320.
- Hotautua conglomerate, Algonkian, Arizona: Noble, 880.
- Hoyt limestone member, Cambrian, New York: Cushing and Ruedemann, 296.
- Hudson River slates, New York: Fettke, 420.
- Hueco limestone, Pennsylvanian, Texas: Richardson, 999.
- Hull formation, Ordovician, Ontario: Raymond, 980.
- Hull terrane, pre-Cambrian, Iowa: Keyes, 661.
- Hundred sandstone, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Huronian, pre-Cambrian, Canada: Coleman, 262.
- Huronian, pre-Cambrian, Ontario: Miller and Knight, 848.
- Huronian conglomerate, pre-Cambrian, Ontario: Coleman, 264.
- Huronian series, Algonkian, Minnesota: Grout and Soper, 502.
- Huronian (Lower) series, pre-Cambrian, Ontario: Collins, 270.
- Huronian (Upper) series, pre-Cambrian, Ontario: Collins, 270.
- Huronic period, pre-Cambrian, Lake Superior region: Keyes, 662.
- Hygiene sandstone member, Cretaceous: Stanton, 1122.
- Illecillewaet quartzite, Beltian, British Columbia: Daly, 306.
- Illinoian stage, Pleistocene, Iowa: Hay, 522.
- Ilo formation, Cretaceous or Tertiary, Wyoming: Hewett, 534.
- Image member, Jurassic, British Columbia: Clapp, 227.
- Independence terrane, Devonian, Iowa: Keyes, 661.
- Indian Ladder beds, Ordovician, New York: Cushing and Ruedemann, 296.
- Ingleside chert, Jurassic?, California: Lawson, 724.
- Ingonish gneiss, pre-Cambrian?, Cape Breton Island: Wright, 1350.
- Intermediate limestone, Devonian, Alberta: Allan, 5.

- Inwood limestone, New York: Fettke, 420.
- Inwood limestone, pre-Cambrian, New York: Berkeley and Healey, 79.
- Ione beds, Eocene, California and Oregon: Arnold and Hannibal, 22.
- Ione formation, Eocene, California: Dickerson, 346; Waring, 1254.
- Iowa stage, Pleistocene, Iowa: Hay, 522.
- Iowa terrane, Pleistocene, Iowa: Keyes, 661.
- Irasburg conglomerate, Ordovician, Vermont: Richardson and Turner, 996; Richardson *et al.*, 997.
- Irondequoit limestone, Silurian, New York: Schuchert, 1054.
- Irondequoit member, Silurian, Ontario: Williams, 1303.
- Itasca moraine, Pleistocene, North Dakota: Simpson, 1090.
- Jackson formation, Eocene, Texas: Deussen, 336.
- Jacksonburg limestone, Ordovician, New Jersey: Bayley *et al.*, 66.
- Jacob sand, Quaternary, New York: Fuller, 441.
- Jacobsville sandstone, Cambrian, Michigan: Smith, 1108.
- Jameco gravel, Quaternary, New York: Fuller, 441.
- James River formation, Ordovician, Nova Scotia: Williams, 1300.
- Jasper terrane, pre-Cambrian, Iowa: Keyes, 661.
- Jefferson limestone, Devonian, British Columbia: Schofield, 1041, 1043.
- Jefferson City formation, Cambrian, Missouri: Lee, 727.
- Jerseyan drift, Pleistocene, New Jersey: Bayley *et al.*, 66.
- Joes Rock granite, Devonian, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Joggins formation, Pennsylvanian, Nova Scotia: Bell, 77.
- Johannian division, Cambrian, New Brunswick: Matthew, 816.
- John Day formation, Oligocene, Oregon: Collier, 266.
- Johnstown cement limestone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Jordan formation, Upper Cambrian (St. Croixan), Upper Mississippi Valley: Walcott, 1244.
- Jordan sandstone, Cambrian, Minnesota: Grout and Soper, 502.
- Jordan terrane, Cambrian, Iowa: Keyes, 661.
- Judith River formation, Cretaceous, Montana: Bowen, 103, 104, 105.
- Judith River formation, Cretaceous, Montana: Stebinger, 1125, 1126.
- Jupiter River formation, Silurian, Anticosti Island: Twenhofel, 1190.
- Kaibab limestone, Carboniferous (Pennsylvanian), Arizona: Hill, 539; Noble, 880.
- Kaibab limestone, Pennsylvanian, Arizona: Gregory, 497.
- Kamloops series, Tertiary, British Columbia: Rose, 1016.
- Kamloops volcanic group, Tertiary, British Columbia: Drysdale, 369.
- Kanawha blackflint, Carboniferous, West Virginia: Krebs and Teets, 697.
- Kanawha series, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Kanouse sandstone, Devonian, New Jersey: Bayley *et al.*, 66.
- Kansan drift, Pleistocene, Iowa: Tilton, 1171.
- Kansan stage, Pleistocene, Iowa: Hay, 522.
- Kansas City formation, Carboniferous, Missouri: Greene, 494.
- Katalla formation, Tertiary, Alaska: Fisher and Calvert, 422.
- Keewatin, pre-Cambrian, Canada: Coleman, 262.
- Keewatin, pre-Cambrian, Ontario: Burrows and Hopkins, 164; Coleman, 264; Collins, 269.
- Keewatin complex, pre-Cambrian, Ontario: Miller and Knight, 848.
- Keewatin series, pre-Cambrian, Lake Superior region: Keyes, 662.
- Keewatin series, pre-Cambrian, Ontario: Lawson, 721.
- Kelly Island formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Keokuk limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Keokuk terrane, Carboniferous, Iowa: Keyes, 661.
- Keewenawan series: Keyes, 661.
- Keewenawan series, pre-Cambrian, Lake Superior region: Keyes, 662.
- Keewenawan, pre-Cambrian, Canada: Coleman, 262.
- Keewenawan, pre-Cambrian, Ontario: Coleman, 264; Collins, 269; Lawson, 721; Miller and Knight, 848.
- Killarney granite, pre-Cambrian, Ontario: Miller and Knight, 848.
- Kimberling shale, Devonian, Virginia: Stose, 1152.
- Kimmswick-Plattin limestone, Ordovician, Illinois: Blatchley, 100.
- Kinderhook group, Mississippian, Illinois: Blatchley, 100.
- Kinderhook group, Mississippian, Mississippi Valley: Weller, 1270.
- Kingston formation, pre-Silurian, Quebec: Hayes, 523.
- Kingston series, Permian, Massachusetts: Loughlin and Hechinger, 767.
- Kitanning (Lower) fire clay, Carboniferous, West Virginia: Hennen and Reger, 527.
- Kitchener formation, pre-Cambrian, British Columbia: Schofield, 1043.
- Kitsalas formation, Triassic?, British Columbia: McConnell, 781.
- Kittatinny limestone, Cambrian and Ordovician, New Jersey: Bayley *et al.*, 66.
- Knight formation, Eocene, Wyoming: Schultz, 1058.
- Knight formation, Tertiary, Wyoming: Granger, 485.
- Knob Hill group, pre-Carboniferous, British Columbia: LeRoy, 738.
- Knox dolomite, Cambrian and Ordovician, Virginia: Stose, 1152.
- Knoxville formation, Cretaceous, California: Arnold and Garfias, 21; Lawson, 724.
- Knoydart formation, Devonian, Nova Scotia: Williams, 1300.
- Koipato formation, Triassic, Nevada: Schrader, 1048.
- Kootenai(?) formation, Cretaceous?, Montana: Bowen, 104.

- Kootenay, Cretaceous, Alberta: Allan, 5; Dowling, 364.
- Kootenay formation, Cretaceous, Alberta: Dowling 362; MacKenzie, 792, 794.
- Kootenay granite, British Columbia: Schofield, 1040.
- Kootenay intrusive: Schofield, 1039.
- Kushtaka formation, Tertiary, Alaska: Fisher and Calvert, 422.
- Ladore shale, Pennsylvanian, Iowa: Tilton, 1070.
- Lafayette? formation, Tertiary, New York: Fuller, 441.
- Lake Evans series, pre-Cambrian, Quebec: Cooke, 275.
- Lake Louise formation, Cambrian, British Columbia: Allan, 5, 6.
- Lake Superior sandstone, Cambrian, Michigan: Smith, 1108.
- Lakota sandstone, Cretaceous, Wyoming: Barnett, 40.
- Lamotte formation, Cambrian, Missouri: Lee, 727.
- Lance formation, Cretaceous: Stanton, 1122.
- Lance formation, Cretaceous or Eocene, North Dakota: Leonard, 737.
- Lance formation, Cretaceous or Tertiary, South and North Dakota: Calvert *et al.*, 193.
- Lance formation, Cretaceous or Tertiary, Wyoming: Barnett, 41.
- Lance formation, Tertiary: Knowlton, 692.
- Lance formation, Tertiary?, Montana: Bauer, 64; Bowen, 103; Rogers, 1012.
- Lance formation, Tertiary?, North Dakota: Lloyd, 758.
- Lance formation, Tertiary?, Wyoming: Barnett, 39.
- Lance Cove formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Laona sandstone, Devonian, New York: Houghton 577.
- La Plata sandstone, Jurassic, Colorado: Cross and Larsen, 290.
- La Plata sandstone, Jurassic, Utah: Lupton, 773.
- Laramie formation, Cretaceous: Knowlton, 692.
- Largo beds, Tertiary, Wyoming: Granger, 485.
- Laurel limestone, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Laurencic period, pre-Cambrian, Lake Superior region: Keyes, 662.
- Laurentian, pre-Cambrian, Ontario: Coleman, 264; Lawson, 721; Miller and Knight, 848.
- Laurentian, pre-Cambrian, Quebec: Wilson, 1314.
- Laurie formation, Beltian, British Columbia: Daly, 306.
- Lawrence terrane, Carboniferous, Iowa: Keyes, 661.
- Lead Creek limestone, Carboniferous, Kentucky: Crider, 281.
- Leaf Hills moraine, Pleistocene, North Dakota: Simpson, 1090.
- LeClaire terrane, Silurian, Iowa: Keyes, 661.
- Lee formation, Pennsylvanian, Kentucky: Munn, 869.
- Lee formation, Pennsylvanian, Virginia: Butts, 179, 180.
- Leech River formation, Carboniferous?, British Columbia: Clapp, 227; Clapp and Cooke, 230.
- Lego limestone, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Leighton gray shale member, Silurian, Maine: Bastin and Williams, 60.
- Leipers limestone, Ordovician, Tennessee: Drake, 366; Wade, 1239.
- Leona rhyolite, Pliocene, California: Lawson, 724.
- Leray limestone, Ordovician, Quebec and Ontario: Raymond, 980.
- Lexington limestone, Ordovician, Kentucky: Foerste, 427.
- Liberty, Ordovician, Indiana: Cumings and Gallo-way, 295.
- Liberty beds, Ordovician, Indiana: Shideler, 1082.
- Lime Creek terrane, Devonian, Iowa: Keyes, 661.
- Linden formation, Devonian, Tennessee: Drake, 366; Wade, 1239.
- Linietta clays, Carboniferous, Kentucky: Morse and Foerste, 867.
- Lipalian time, pre-Cambrian, British Columbia: Walcott, 1246.
- L'Islet formation, Cambrian, Quebec: Dresser, 367.
- Lissie gravel, Pleistocene, Texas: Deussen, 336.
- Listmore formation, Carboniferous, Nova Scotia: Williams, 1300.
- Little Bell Island formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Little Falls dolomite, Cambrian, New York: Cushing and Ruedemann, 296.
- Little River formation, Quebec: Hayes, 523.
- Livingston formation, Cretaceous: Stanton, 1122.
- Lloyd sand, Cretaceous, New York: Fuller, 441.
- Lobelville limestone, Silurian, Tennessee: Drake, 366.
- Lockatong formation, Triassic, New Jersey: Bayley *et al.*, 66.
- Lockatong formation, Triassic, Pennsylvania and New Jersey: Hawkins, 520.
- Lockport dolomite, Silurian, New York: Schuchert, 1054.
- Lockport dolomite, Silurian, Ontario: Williams, 1301.
- Lockport limestone, Silurian, New York: Hopkins, 571.
- Lockport member, Silurian, Ontario: Williams, 1303.
- Logan formation, Carboniferous, Ohio and Kentucky: Morse and Foerste, 867.
- Loganian, pre-Cambrian, Ontario: Miller and Knight, 848.
- Longwood shale, Silurian, New Jersey: Bayley *et al.*, 66.
- Lorrain granite, pre-Cambrian, Ontario: Miller and Knight, 848.
- Lorraine or Maysville, Ordovician, Michigan: Smith, 1108.
- Lorraine formations, Ordovician, Quebec and New York: Foerste, 428.
- Losee gneiss, pre-Cambrian, New Jersey: Bayley *et al.*, 66.
- Lost Cabin formation, Tertiary, Wyoming: Granger, 485.
- Louisiana limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Louisiana limestone, Mississippian, Missouri: Lee, 727.
- Louisiana terrane, Carboniferous, Iowa: Keyes, 661.
- Lower quartzite, New York: Pettke, 420.

- Lowville limestone, Ordovician, Quebec and Ontario: Raymond, 980.
- Lucas dolomite, Silurian, Michigan: Sherzer, 1081.
- Lucas dolomite, Silurian, Ontario: Stauffer, 1123.
- Lucas limestone, Devonian, Iowa: Keyes, 657.
- Lucas terrane, Devonian, Iowa: Keyes, 661.
- Ludlow lignitic member, Tertiary: Knowlton, 692.
- Ludlowville shale, Devonian, New York: Houghton, 577; Luther, 775.
- Lynn volcanics, Devonian or Mississippian, Massachusetts: Clapp, 222.
- Lynnfield serpentine, Cambrian?, Massachusetts: Clapp, 222.
- Lysite formation, Tertiary, Wyoming: Granger, 485.
- McAdam formation, Silurian, Nova Scotia: Williams, 1300.
- McAlester shale, Pennsylvania, Arkansas and Oklahoma: Smith, 1097.
- McAlester shale, Pennsylvania, Oklahoma: Snider, 1113.
- McAra Brook formation, Carboniferous, Nova Scotia: Williams, 1300.
- McCloud formation, Pennsylvanian, California: Boyle, 113.
- McElmo formation, Jurassic?, Colorado: Cross and Larsen, 290.
- McElmo formation, Jurassic?, Utah: Lupton, 773.
- McKim greywacké, pre-Cambrian, Ontario: Coleman, 264.
- McLeansboro formation, Pennsylvanian, Illinois: Blatchley, 98, 100.
- McMicken, Ordovician, Indiana: Cumings and Galloway, 295.
- McNairy sand member, Cretaceous, Gulf States: Stephenson, 1128.
- Madison formation, Ozarkian, Upper Mississippi Valley: Walcott, 1244.
- Madison (?) limestone, Carboniferous, Montana: Bowen, 104.
- Madison limestone, Mississippian, Idaho: Richards and Mansfield, 995.
- Madison limestone, Mississippian, Montana: Stone and Bonine, 1149.
- Madisonville limestone, Carboniferous, Kentucky: Crider, 284; Hutchinson, 600.
- Magothy formation, Cretaceous, Maryland: Berry, 84.
- Mahoning sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Maidment formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Malahat volcanics, Carboniferous?, British Columbia: Clapp, 227; Clapp and Cooke, 230.
- Malden sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Malignant Cove formation, Ordovician, Nova Scotia: Williams, 1300.
- Mancos formation, Cretaceous, New Mexico: Kirk, 683; Winchester, 1324.
- Mancos formation, Cretaceous, Utah: Clark, 235.
- Mancos shale, Cretaceous, Utah: Lupton, 773.
- Manhasset formation, Quaternary, New York: Fuller, 441.
- Manhattan schist, New York: Fettke, 420.
- Manhattan schist, pre-Cambrian, New York: Berkeley and Healey, 79.
- Manigotagan granites, pre-Cambrian, Manitoba: Moore, 860.
- Manitoba formation, Devonian, Manitoba: MacLean and Wallace, 796.
- Manitoban formation, Devonian, Manitoba: Kindle, 676.
- Manitoulin limestone member, Silurian, New York and Ontario: Schuchert, 1054.
- Manitoulin member, Silurian, Ontario: Williams, 1301, 1303.
- Manix beds, Pleistocene, California: Buwalda, 181.
- Mankomen formation, Carboniferous, Alaska: Moffit, 854.
- Manlius limestone, Silurian, New York: Hopkins, 571.
- Mannetto gravel, Quaternary, New York: Fuller, 441.
- Mannington sandstone, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Manuels formation, Cambrian, Newfoundland: Van Ingen, 1222.
- Maquoketa shale, Ordovician, Illinois: Blatchley, 100; Cady, 185; Cox, 278.
- Maquoketa shale, Ordovician, Iowa: Thomas, 1165.
- Maquoketa shale, Ordovician, Minnesota: Grout and Soper, 502.
- Maquoketan series: Keyes, 661.
- Marais des Cygnes terrane, Carboniferous, Iowa: Keyes, 661.
- Marble Bay formation, Triassic or Jurassic, British Columbia: Cairnes, 191; McConnell, 782.
- Marble Canyon limestone, Carboniferous, British Columbia: Drysdale, 369.
- Marcellus black shale, Devonian, New York: Luther, 775.
- Marcellus shale, Devonian, New York: Houghton, 577.
- Marcellus shales, Devonian, New York: Hopkins, 571.
- Marietta (Lower) sandstone, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Marietta (Upper) sandstone, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Marin sandstone, Jurassic?, California: Lawson, 724.
- Marquettan series, pre-Cambrian, Lake Superior region: Keyes, 662.
- Marshall sandstone, Carboniferous, Michigan: Cook, 273.
- Marshall sandstone, Mississippian, Michigan: Smith, 1108.
- Martinez formation, Eocene, California: Lawson, 724; Waring, 1254.
- Martinez group, Eocene, California: Dickerson, 340, 341, 342.
- Martinsburg shale, Ordovician, New Jersey: Bayley *et al.*, 66.
- Mascall formation, Miocene, Oregon: Collier, 266.
- Maysville group, Ordovician, Indiana: Cumings and Galloway, 295.
- Maywood clays, Pleistocene, British Columbia: Clapp, 223, 227.
- Medina formation, Silurian, New York and Ontario: Schuchert, 1054.
- Medina formation, Silurian, Ontario: Williams, 1303.
- Meeteetse formation, Cretaceous, Wyoming: Hewett, 534.

- Menard formation, Mississippian, Illinois: Weller, 1269, 1270.
- Mendota formation, Ozarkian, Upper Mississippi Valley: Walcott, 1244.
- Meramec group, Mississippian, Illinois: Blatchley, 100.
- Meramec group, Mississippian, Mississippi Valley: Weller, 1270.
- Merced formation, Pliocene, California: Lawson, 724.
- Merrimac schists, Mississippian, Massachusetts: Clapp, 222.
- Merritt sand, Pleistocene, California: Lawson, 724.
- Mesaverde formation, Cretaceous, New Mexico: Winchester, 1324.
- Mesaverde formation, Cretaceous, Utah: Clark, 235.
- Mesaverde series, Cretaceous, New Mexico: Kirk, 683.
- Metchozin volcanics, Eocene, British Columbia: Clapp, 223, 227.
- Mettawee slate, Cambrian, New York: Cushing and Ruedemann, 296.
- Michigan series, Mississippian, Michigan: Cook, 273; Smith, 1108.
- Middendorf arkose member, Upper Cretaceous, S. Carolina: Berry, 80.
- Middlesex black shale, Devonian, New York: Luther, 775.
- Middlesex shale, Devonian, New York: Houghton, 577.
- Midway formation, Eocene, Texas: Deussen, 336.
- Milford granite, Devonian, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Milford granite, Rhode Island: Loughlin and Hechinger, 767.
- Millersburg limestone, Ordovician, Kentucky: Foerste, 427.
- Millican formation, Algonkian?, Texas: Richardson, 999.
- Minnesotan series: Keyes, 661.
- Mispeck formation, Quebec: Hayes, 523.
- Missi formation, pre-Cambrian, Saskatchewan: Bruce, 144.
- Mississippian series: Keyes, 661.
- Missourian series: Keyes, 661.
- Moccasin limestone, Ordovician, Virginia: Stose, 1152.
- Moencopie formation, Permian?, Arizona: Gregory, 497.
- Mohawkian series: Keyes, 661.
- Moir granite, pre-Cambrian, Ontario: Miller and Knight, 848.
- Molas formation, Pennsylvanian, Colorado: Cross and Larsen, 290.
- Monongahela series, Carboniferous, West Virginia: Hennen and Reger, 527.
- Monongahela series, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Monroe formation, Silurian, Michigan: Sherzer, 1081; Smith, 1108.
- Monroe (Lower), Silurian, Michigan: Cook, 273; Sherzer, 1081.
- Monroe (Upper) series, Devonian, Michigan: Cook, 273.
- "Montana granite," pre-Franciscan (Mesozoic), California: Lawson, 724.
- Montana group, Cretaceous, Montana: Stebinger, 1125, 1126.
- Montana group, Cretaceous, South Dakota: Calvert *et al.*, 193.
- Montanau series: Keyes, 661.
- Montauk till member, Quaternary, New York: Fuller, 441.
- Monterey formation, Miocene, California: Anderson and Martin, 18.
- Monterey group, Miocene, California: Lawson, 724.
- Monticello terrane, Silurian, Iowa: Keyes, 661.
- Montoya limestone, Ordovician, Texas: Richardson, 999.
- Montrose chert, Carboniferous, Iowa: Keyes, 661.
- Montrose chert bed, Mississippian, Mississippi Valley: Weller, 1270.
- Moose metargillite, Beltian, British Columbia: Daly, 306.
- Moose River sandstone, Devonian, Maine: Clarke, 244; Pirsson and Schuchert, 955.
- Moraga formation, Pliocene, California: Lawson, 724.
- Morgan formation, Pennsylvanian, Utah: Richards and Mansfield, 995.
- Morgantown sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Morrison formation, Jurassic or Cretaceous, Wyoming: Barnett 39, 41; Hewett, 534.
- Morrison shale, Jurassic or Cretaceous, Wyoming: Barnett, 40.
- Morrow formation, Pennsylvanian, Oklahoma: Smith, 1098.
- Moscow shale, Devonian, New York: Houghton, 577; Luther, 775.
- Mount Hope marl, Tertiary, South Carolina: Stephenson, 1129.
- Mount Hope-Fairmount (Fairview), Ordovician, Indiana: Cummings and Galloway, 295.
- Mount Savage fire clay, Carboniferous, West Virginia: Hennen and Reger, 527.
- Mount Selman formation, Eocene, Texas: Deussen, 336.
- Mount Simon formation, Upper Cambrian (St. Croixan), Upper Mississippi Valley: Walcott, 1244.
- Mount Whyte formation, Cambrian, British Columbia: Allan, 5, 6.
- Mowry shale member, Cretaceous, Wyoming: Barnett, 39-41.
- Moydart formation, Silurian, Nova Scotia: Williams, 1300.
- Moyie formation, pre-Cambrian, British Columbia: Schofield, 1039.
- Moyie sills, British Columbia: Schofield, 1042.
- Moyie sills, pre-Cambrian, British Columbia: Schofield, 1042.
- Muav limestone, Cambrian, Arizona: Hill, 539; Noble, 880.
- Mud Hill series, Tertiary, California: Free, 438.
- Mud Lake granite, pre-Cambrian, Ontario: Lawson, 721.
- Nakimu limestone, Beltian, British Columbia: Daly, 306.
- Nanaimo series, Cretaceous, British Columbia: Clapp, 223, 225; Clapp and Cooke, 230.

- Napoleon formation, Mississippian, Michigan: Smith, 1108.
- Napoleon (upper Marshall) formation, Mississippian, Michigan: Cook, 273.
- Narragansett series, Carboniferous, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Nass formation, British Columbia: McConnell, 780.
- Nassau beds, Cambrian, New York: Cushing and Ruedemann, 296.
- Nation River formation, Carboniferous, Alaska and Yukon: Cairnes, 186, 187, 189.
- Nebraskan stage, Pleistocene, Iowa: Hay, 522.
- Neva limestone, Permian, Oklahoma: Beede, 73.
- Newark group, Triassic, New Jersey: Bayley *et al.*, 66.
- Newcastle formation, Cretaceous, British Columbia: Clapp, 225.
- New Germantown sheet, Triassic, New Jersey: Bayley *et al.*, 66.
- Newland ("Wallace") formation, Algonkian, Idaho and Montana: Calkins and Jones, 192.
- Newman limestone, Carboniferous, Virginia: Stose, 1152.
- Newman limestone, Mississippian, Kentucky: Munn, 869.
- Newman limestone, Mississippian, Virginia: Butts, 179.
- New Richmond sandstone, Ordovician, Illinois: Cox, 278.
- New Richmond terrane, Cambrian, Iowa: Keyes, 661.
- New Vernon sheet, Triassic, New Jersey: Bayley *et al.*, 66.
- Niagara dolomite, Ordovician, Illinois: Cox, 278.
- Niagara formation, Silurian, Michigan: Sherzer, 1081.
- Niagara formation, Silurian, Ontario: Williams, 1303.
- Niagara limestone, Silurian, Illinois: Cady, 185.
- Niagara limestone, Silurian, Michigan: Smith, 1108.
- Niagaran series: Keyes, 661.
- Nicholas bed, Ordovician, Kentucky: Foerste, 427.
- Nicola group, Jura-Triassic, British Columbia: Drysdale, 369.
- Nicola series, Triassic, British Columbia: Rose, 1016.
- Niobrara limestones, Cretaceous, Iowa: Keyes, 655.
- Niobrara shale, Cretaceous, Wyoming: Barnett, 39-41.
- Niobrara terrane, Cretaceous, Iowa: Keyes, 661.
- Niobrara-Benton shales, Cretaceous, Alberta: Dowing, 362, 364.
- Nipissing diabase, pre-Cambrian, Ontario: Miller and Knight, 848.
- Nipissing diabase, pre-Cambrian, Quebec: Wilson, 1313, 1314.
- Nishnabotna sandstone, Cretaceous, Iowa: Keyes, 655.
- Nishnabotna terrane, Cretaceous, Iowa: Keyes, 661.
- Noix limestone, Silurian, Missouri: Keyes, 659.
- Noix oolite member, Silurian, Missouri: Savage, 1031.
- Nolichucky shale, Cambrian, Virginia: Stose, 1152.
- Normanskill grit, Ordovician, New York: Cushing and Ruedemann, 296.
- Normanskill shale, Ordovician, New York: Cushing and Ruedemann, 296.
- Northbrae rhyolite, Pliocene, California: Lawson, 724.
- Northbridge gneiss, Rhode Island: Loughlin and Hechinger, 767.
- Northumberland formation, Cretaceous, British Columbia: Clapp, 225.
- Norton formation, Pennsylvanian, Virginia: Butts, 179, 180.
- Nosoni formation, Pennsylvanian, California: Boyle, 113.
- Nugget sandstone, Jurassic or Triassic, Idaho: Richards and Mansfield, 995.
- Nugget sandstone, Jurassic or Triassic, Wyoming: Schultz, 1058.
- Nunda sandstones, Devonian, New York: Luther, 775.
- Oakland conglomerate member, Cretaceous, California: Lawson, 724.
- Octoraro mica schist, Ordovician, Pennsylvania: Bliss and Jonas, 101.
- Ohio shale, Devonian and Carboniferous, Kentucky: Morse and Foerste, 867.
- Ohio shale, Devonian, Ontario: Kindle, 677.
- Ohio shales, Devonian, Ontario: Williams, 1302.
- Ojo Alamo beds, Cretaceous, New Mexico: Brown, 133.
- Ojo Alamo beds, Tertiary or Cretaceous, New Mexico: Sinclair and Granger, 1093.
- Okaw formation, Mississippian, Illinois: Weller, 1269.
- Okaw formation, Mississippian, Mississippi Valley: Weller, 1270.
- Oklahoman series: Keyes, 661.
- Olequa formation, Eocene, California and Oregon: Arnold and Hannibal, 22.
- Oneida conglomerate, Devonian, New York: Clarke, 244.
- Oneota dolomite, Ordovician, Illinois: Cox, 278.
- Oneota dolomite, Ordovician, Minnesota: Grout and Soper, 502.
- Oneota formation, Ozarkian, Upper Mississippi Valley: Walcott, 1244.
- Oneota terrane, Cambrian, Iowa: Keyes, 661.
- Onondaga limestone, Devonian, New York: Hopkins, 571; Houghton, 577; Luther, 775.
- Onondaga limestone, Devonian, Ontario: Kindle, 677.
- Open Bay group, Cretaceous or Jurassic, British Columbia: Cairnes, 191.
- Orange group, Mesozoic-Pennsylvanian, Alaska and Yukon: Cairnes, 187.
- Orange group, Mesozoic, Yukon and Alaska: Cairnes, 189.
- Orca group, Mesozoic, Alaska: Moffit, 854.
- Oread limestone, Carboniferous, Oklahoma: Buttram, 178.
- Orinda formation, Pliocene, California: Lawson, 724.
- Orindan formation, Tertiary, California: Merriam, 834.
- Oriskany series: Keyes, 661.
- Oriskany, Devonian, New York: Clarke, 244.
- Oriskany formation, Devonian, Maine: Pirsson and Schuchert, 955.
- Oriskany sandstone, Devonian, New York: Hopkins, 571; Luther, 775.

- Oriskany sandstone, Devonian, Ontario: Kindle, 677.
- Osage group, Mississippian, Illinois: Blatchley, 100.
- Osage group, Mississippian, Mississippi Valley: Weller, 1270.
- Osgood limestone, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Otis terrane, Devonian, Iowa: Keyes, 661.
- Otter granite, Tertiary (Miocene?), British Columbia: Camsell, 197.
- Ottertail formation, Cambrian, British Columbia: Allan, 6.
- Ottertail limestone formation, Cambrian, British Columbia: Allan, 5.
- Ouray limestone, Carboniferous and Devonian, Colorado: Cross and Larsen, 290.
- Oursan sandstone, Miocene, California: Lawson, 724.
- Ozarkian series: Keyes, 661.
- Ozarkian series, Cambrian, Lake Superior region: Keyes, 662.
- Paget formation, Cambrian, British Columbia: Allan, 5, 6.
- Paint Creek formation, Mississippian, Illinois: Weller, 1269.
- Paint Creek formation, Mississippian, Mississippi Valley: Weller, 1270.
- Palestine formation, Mississippian, Illinois: Weller, 1269.
- Palestine formation, Mississippian, Mississippi Valley: Weller, 1270.
- Palisade trap, Triassic, New Jersey: Berkey and Healey, 79.
- Pamelia (upper and lower), Ordovician, Ontario: Raymond, 980.
- Paris formation, Ordovician, Kentucky: Foerste, 427.
- Park City formation, Carboniferous, Utah: Richards and Mansfield, 995.
- Park City formation, Pennsylvanian and Permian?, Wyoming: Schultz, 1058.
- Parkman (?) sandstone member, Cretaceous, Wyoming: Barnett, 41.
- Parkville terrane, Carboniferous, Iowa: Keyes, 661.
- Parma sandstone, Carboniferous, Michigan: Cook, 273.
- Parma sandstone, Pennsylvanian, Michigan: Smith, 1108.
- Parrsboro formation, Carboniferous, Nova Scotia: Hyde, 602.
- Paskapoo formation, Tertiary, Canada: Brown, 133.
- Paskapoo series, Tertiary, Alberta: Dowling, 362, 364.
- Paso Robles formation, Neocene, California: Anderson and Martin, 18.
- Pawhuska limestone, Carboniferous, Oklahoma: Beede, 73.
- Pawnee limestone, Permian, Oklahoma: Beede, 73.
- Pawtucket formation, Carboniferous, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Peabody granite, Mississippian or Pennsylvanian, Massachusetts: Clap, 222.
- Peedee sand, Cretaceous, South Carolina: Stephenson, 1129.
- Peedee sand, Upper Cretaceous, South Carolina: Berry, 80.
- Peekskill Creek limestone, New York: Fettke, 420.
- Peekskill phyllite, New York: Fettke, 420.
- Peerless sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Peerless (Lower) sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Pegram limestone, Devonian, Tennessee: Drake, 366.
- Pella beds, Mississippian, Iowa: Weller, 1270.
- Pella terrane, Carboniferous, Iowa: Keyes, 661.
- Pembroke formation, Silurian, Maine: Bastin and Williams, 60.
- Pennington shale, Mississippian, Kentucky: Munn, 869.
- Pennington shale, Mississippian, Virginia: Butts, 179.
- Pensauken formation, Pleistocene, New Jersey: Bayley *et al.*, 66.
- Peoria terrane, Pleistocene, Iowa: Keyes, 661.
- Peorian stage, Pleistocene, Iowa: Hay, 522.
- Perry formation, Devonian, Maine: Bastin and Williams, 60.
- Perryville formation, Ordovician, Kentucky: Foerste, 427; Miller, 843.
- Phillips formation, pre-Cambrian, British Columbia: Schofield, 1040, 1043.
- Phosphoria formation, Permian?, Montana: Stone and Bonine, 1149.
- Phosphoria formation, Permian?, Idaho: Richards and Mansfield, 995.
- Picton (upper and lower) formation, Ordovician, Ontario: Raymond, 980.
- Pierre formation, Cretaceous, Wyoming: Barnett, 41.
- Pierre shale, Cretaceous: Stanton, 1122.
- Pierre shale, Cretaceous, Montana: Rogers, 1012.
- Pierre shale, Cretaceous, North Dakota: Leonard, 737.
- Pierre shale, Cretaceous, South Dakota: Calvert *et al.*, 193.
- Pierre shale, Cretaceous, Wyoming: Barnett, 39, 40.
- Pierre shales, Cretaceous, Canada: Brown, 133.
- Pierson limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Pine Creek limestone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Pinole tuff, Pliocene, California: Lawson, 724.
- Pioche formation, Cambrian, Utah, Nevada: Burling, 157.
- Pit shales, Triassic, California: Boyle, 113.
- Pitkin limestone, Mississippian, Oklahoma: Smith, 1098; Snider, 1114.
- Pittsburgh (Little) limestone, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Pittsburgh red shale, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Pittsburgh sandstone, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Pittsburgh (Lower) sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Pittsburgh (Upper) sandstone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Pittsford shale, Silurian, New York: Hopkins, 571.
- Platte terrane, Carboniferous, Iowa: Keyes, 661.

- Platteville limestone, Ordovician, Illinois: Cox, 278.
 Platteville limestone, Ordovician, Minnesota: Grout and Soper, 502.
 Platteville terrane, Ordovician, Iowa: Keyes, 661.
 Plattsmouth terrane, Carboniferous, Iowa: Keyes, 661.
 Pleasanton formation, Carboniferous, Missouri: Greene, 494.
 Pochuck gneiss, pre-Cambrian, New Jersey: Bayley *et al.*, 66.
 Pocono series, Carboniferous, West Virginia: Hennen and Reger, 527.
 Point Edward formation, Pennsylvanian, Nova Scotia: Hyde, 602.
 Point Pleasant member, Ordovician, Kentucky: Foerste, 427.
 Pokegama quartzite, Algonkian, Minnesota: Grout and Soper, 502.
 Ponca sandstone, Cretaceous, Iowa: Keyes, 655.
 Ponca terrane, Cretaceous, Iowa: Keyes, 661.
 Pondville conglomerate, Permian?, Massachusetts: Loughlin and Hechinger, 767.
 Pontiac schist, pre-Cambrian, Quebec: Wilson, 1313, 1314.
 Pontiac series, pre-Cambrian, Quebec: Wilson, 1313.
 Portage beds, Devonian, New York: Houghton, 577.
 Port Ewen beds, Devonian, New York: Clarke, 244.
 Potosi formation, Cambrian, Missouri: Lee, 727.
 Potsdam sandstone, Cambrian, New York: Cushing and Ruedemann, 296.
 Pottsville, Pennsylvanian, Illinois: Cady, 185.
 Pottsville formation, Pennsylvanian, Illinois: Blatchley, 98, 100; Hinds, 543.
 Pottsville series, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
 Poughquag quartzite, Cambrian, New York: Fetteke, 420.
 Prairie du Chien series, Ordovician, Illinois: Cox, 278.
 Prairie du Chien group, Ordovician, Minnesota: Grout and Soper, 502.
 Price sandstone, Devonian, Virginia: Stose, 1152.
 Prince Rupert formation, upper Paleozoic?, British Columbia: McConnell, 781.
 Prince Rupert schists, British Columbia: McConnell, 782.
 Princeton series, pre-Cambrian, Michigan: Allen, 14; Allen and Barrett, 15.
 Proctor formation, Cambrian, Missouri: Lee, 727.
 Prospect Hill sheet, Triassic, New Jersey: Bayley *et al.*, 66.
 Protection formation, Cretaceous, British Columbia: Clapp, 225.
 Providence sand member, Upper Cretaceous, Georgia: Berry, 80.
 Puero formation, Tertiary, New Mexico: Brown, 133; Sinclair and Granger, 1093.
 Puget formation, Tertiary, Washington: Daniels, 308.
 Pulaski shale, Devonian, Virginia: Stose, 1152.
 Pulaski shales, Ordovician, New York: Foerste, 428.
 Purcell lava, pre-Cambrian, British Columbia: Schofield, 1040.
 Purcell lava formation, pre-Cambrian, British Columbia: Schofield, 1043.
 Purcell series, pre-Cambrian, British Columbia: Schofield, 1039, 1040, 1042, 1043.
 Purcell sills, pre-Cambrian, British Columbia: Schofield, 1039, 1040, 1042.
 Purgatory conglomerate, Permian, Massachusetts: Loughlin and Hechinger, 767.
 Put-in-Bay dolomite, Silurian, Michigan: Sherzer, 1081.
 Put-in-Bay dolomite, Silurian, Ontario: Stauffer, 1123.
 Puyallup clays, sands and gravels, Quaternary, British Columbia: Clapp, 225.
 Puyallup interglacial deposits, Pleistocene, British Columbia: Clapp, 223, 227.
 Quadrant (?) quartzite, Pennsylvanian?, Montana: Stone and Bonine, 1149.
 Queen Charlotte Islands formation (?), Cretaceous, British Columbia: Drysdale, 369.
 Queen Charlotte series, Cretaceous, British Columbia: MacKenzie, 793.
 Queen Charlotte series, Jurassic, British Columbia: Clapp, 227.
 Queenston formation, Ordovician, New York and Ontario: Schuchert, 1054.
 Queenston shales, Ordovician, Ontario: Williams, 1303.
 Queniult formation, Pliocene, Washington: Lupton, 774.
 Quincy granite, Massachusetts: Loughlin and Hechinger, 767.
 Quoddy shale, Silurian, Maine: Bastin and Williams, 60.
 Racquet group, Carboniferous, Alaska and Yukon: Cairnes, 186, 187.
 Racquet series, Yukon and Alaska: Cairnes, 189.
 Raisin River dolomite, Silurian, Michigan: Sherzer, 1081.
 Raisin River dolomite, Silurian, Ontario: Stauffer, 1123.
 Ralston formation, Tertiary, Wyoming: Granger, 485.
 Ralston group, Carboniferous, Oklahoma: Beede, 73.
 Ramsay Lake conglomerate, pre-Cambrian, Ontario: Coleman, 264.
 Ramsay Lake series, pre-Cambrian, Ontario: Miller and Knight, 848.
 Random formation, pre-Cambrian, Newfoundland: Van Ingen, 1222.
 Rapid limestone, Devonian, Iowa: Keyes, 657.
 Rapid terrane, Devonian, Iowa: Keyes, 661.
 Raritan formation, Cretaceous, New Jersey and Maryland: Berry, 84.
 Rattlesnake formation, Pliocene, Oregon: Collier, 266.
 Ravenswood granodiorite, pre-Cambrian, New York: Berkey and Healey, 79.
 Red Beds, Permian, Texas: Udden, 1202.
 Red Head formation, Carboniferous, Quebec: Hayes, 523.
 Redmond formation, Ordovician, Newfoundland: Van Ingen, 1222.
 Redwall limestone, Carboniferous (Mississippian), Arizona: Noble, 880.
 Redwall limestone, Carboniferous, Arizona: Hill, 539.

- Renault formation, Mississippian, Illinois: Weller, 1269.
- Renault formation, Mississippian, Mississippi Valley: Weller, 1270.
- Rensselaer grit, Devonian, New York: Clarke, 244.
- Revett quartzite, Algonkian, Idaho and Montana: Calkins and Jones, 192.
- Rex chert member, Permian?, Idaho: Richards and Mansfield, 995.
- Rhinestreet black shale, Devonian, New York: Luther, 775.
- Rhinestreet shale, Devonian, New York: Houghton, 577.
- Rice Lake series, pre-Cambrian, Manitoba: Moore, 860.
- Richmond group, Ordovician, Indiana: Cumings and Galloway, 295; Shideler, 1082.
- Richmond group, Ordovician, Ontario: Williams, 1301.
- Riders Brook formation, Ordovician, Newfoundland: Van Ingen, 1222.
- Ridgetop shale, Mississippian, Tennessee: Drake, 366; Wade, 1239.
- Ripley formation, Cretaceous, Gulf States: Stephenson, 1128.
- Ripley formation, Upper Cretaceous, Georgia: Berry, 80.
- Riverside sands, Tertiary, Iowa: Keyes, 656.
- Riverside terrane, Tertiary, Iowa: Keyes, 661.
- Roan gneiss series, pre-Cambrian, Georgia: Hopkins, 568.
- Rochester member, Silurian, Ontario: Williams, 1303.
- Rochester shale, Silurian, Michigan: Smith, 1108.
- Rochester shale, Silurian, New York: Schuchert, 1054.
- Rockcastle conglomerate member, Pennsylvanian, Kentucky: Munn, 869.
- Rockford limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Rockland formation, Ordovician, Ontario: Raymond, 980.
- Rockwood formation, Silurian, Virginia: Stose, 1152.
- Rocky Mountain quartzite, Carboniferous, Alberta: Allan, 5.
- Rodeo shale, Miocene, California: Lawson, 724.
- Romney shale, Devonian, Virginia: Stose, 1152.
- Rondout waterlime, Silurian, New York: Hopkins, 571.
- Ronkonkoma moraine, Quaternary, New York: Fuller, 441.
- Roosville formation, pre-Cambrian, British Columbia: Schofield, 1040, 1043.
- Ross quartzite, Beltian, British Columbia: Daly, 306.
- Ross Brook formation, Silurian, Nova Scotia: Williams, 1300.
- Roubidoux formation, Cambrian, Missouri: Lee, 727.
- Rowlesburg sandstone, Devonian, West Virginia: Hennen and Reger, 527.
- Roxbury conglomerate, Massachusetts: Sayles, 1034.
- Roxbury conglomerate, Carboniferous, Massachusetts: Lahee, 702.
- Roxbury series, Massachusetts: Sayles, 1034.
- Ruffner fire clay, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Ruma formation, Mississippian, Illinois: Weller, 1269.
- Ruma formation, Mississippian, Mississippi Valley: Weller, 1270.
- Russell formation, Cambrian, Virginia: Stose, 1152.
- Rustler limestone, Permian, Texas: Richardson, 999.
- Rysedorph Hill conglomerate, Ordovician, New York: Cushing and Ruedemann, 296.
- Saanich granodiorite, British Columbia: Clapp, 227.
- Saanich granodiorite, Jurassic, British Columbia: Clapp, 223, 225; Clapp and Cooke, 230.
- Sabula terrane, Silurian, Iowa: Keyes, 661.
- Saginaw formation, Carboniferous, Michigan: Cook, 273.
- Saginaw formation, Pennsylvanian, Michigan: Smith, 1108.
- St. John group, Cambrian, New Brunswick: Matthew, 816.
- St. John group, Cambrian, Quebec: Hayes, 523.
- St. Lawrence formation, Cambrian, Minnesota: Grout and Soper, 502.
- St. Lawrence formation, Upper Cambrian (St. Croixan), Upper Mississippi Valley: Walcott, 1244.
- St. Lawrence terrane, Cambrian, Iowa: Keyes, 661.
- St. Louis formation, Mississippian, Illinois: Blatchley, 98.
- St. Louis limestone, Mississippian, Illinois: Blatchley, 100.
- St. Louis limestone, Mississippian, Mississippi Valley: Weller, 1270.
- St. Louis limestone, Mississippian, Tennessee: Drake, 366; Wade, 1239.
- St. Louis terrane, Carboniferous, Iowa: Keyes, 661.
- St. Mary sills, British Columbia: Schofield, 1042.
- St. Mary River formation, Upper Cretaceous or Eocene, Montana: Stebinger, 1124.
- St. Marys formation, Miocene, Virginia: Olsson, 889.
- St. Peter sandstone, Ordovician, Illinois: Blatchley, 100; Cady, 185; Cox, 278.
- St. Peter sandstone, Ordovician, Minnesota: Grout and Soper, 502.
- St. Peter terrane, Ordovician, Iowa: Keyes, 661.
- St. Peters sandstone, Ordovician, Michigan: Smith, 1108.
- St. Piran formation, Cambrian, British Columbia: Allan, 5, 6.
- St. Regis formation, Algonkian, Idaho and Montana: Calkins and Jones, 192.
- Ste. Genevieve formation, Mississippian, Illinois: Blatchley, 98.
- Ste. Genevieve limestone, Mississippian, Illinois: Blatchley, 100.
- Ste. Genevieve limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Salem gabbro-diorite, post-Ordovician and pre-Silurian?, Massachusetts: Clapp, 222.
- Salem limestone, Mississippian, Illinois: Blatchley, 100.
- Salem limestone, Mississippian, Mississippi Valley: Weller, 1270.
- Salina, Silurian, Michigan: Cook, 273.
- Salina formation, Silurian, Michigan: Sherzer, 1081; Smith, 1108.

- Salina limestone, Silurian, Ontario: Kindle, 677.
- Salmon formation, pre-Cambrian?, Oregon: Winchell, 1320.
- Salmon schist, California: Ferguson, 416.
- Salmon Arm schist, pre-Beltian, British Columbia: Daly, 306.
- Salmontrout limestone, Devonian, Alaska: Cairnes, 187.
- Salmontrout limestone, Devonian, Alaska and Yukon: Cairnes, 186.
- Saltsburgh sandstone, Carboniferous, West Virginia: Hennen and Reger, 527; Krebs and Teets, 697.
- Salt Wash sandstone member, Jurassic?, Utah: Lupton, 773.
- Saluda, Ordovician, Indiana: Cumings and Gallo-way, 295.
- Saluda beds, Ordovician, Indiana: Shideler, 1082.
- Salvisa limestone, Ordovician, Kentucky: Foerste, 427.
- Salvisa member, Ordovician, Kentucky: Miller, 843.
- San Antonio formation, Pleistocene, California: Lawson, 724.
- Sand Coulee beds, Tertiary, Wyoming: Granger, 485.
- Sangamon stage, Pleistocene, Iowa: Hay, 522.
- San Pablo formation, Miocene, California: Lawson, 724.
- San Pedro formation, Quaternary, California: Arnold, and Garfias, 21.
- Santa Clara formation, Pliocene and Quaternary, California: Lawson, 724.
- Santa Margarita(?) formation, Miocene, California: Pack and English, 903.
- Santa Margarita group, Neocene, California: Anderson and Martin, 18.
- Satanka (?) shale, Carboniferous, Wyoming: Barnett, 41.
- Saugus granodiorite, post-Ordovician and pre-Silurian?, Massachusetts: Clapp, 222.
- Saugus quartz diorite, post-Ordovician and pre-Silurian?, Massachusetts: Clapp, 222.
- Sausalito chert, Jurassic?, California: Lawson, 724.
- Savanna formation, Pennsylvanian, Arkansas and Oklahoma: Smith, 1097.
- Savanna formation, Pennsylvanian, Oklahoma: Snider, 1113.
- Saverton terrane, Carboniferous, Iowa: Keyes, 661.
- Sawback formation, Devonian, Alberta: Allan, 5.
- Schaghticoke shale, Ordovician, New York: Cushing and Ruedemann, 296.
- Schenectady formation, Ordovician, New York: Cushing and Ruedemann, 296.
- Schodack shales and limestones, Cambrian, New York: Cushing and Ruedemann, 296.
- Seaforth limestone, Oligocene?, Antigua: Brown, 130.
- Seine conglomerate, pre-Cambrian, Ontario: Lawson, 721.
- Seine series, pre-Cambrian, Ontario: Lawson, 721; Miller and Knight, 848.
- Selkirk series, Beltian, British Columbia: Daly, 306.
- Selkirk series, pre-Cambrian, British Columbia: Schofield, 1041.
- Selkirkic period, pre-Cambrian, Lake Superior region: Keyes, 662.
- Selma chalk, Cretaceous, Gulf States: Stephenson, 1128.
- Senecan series: Keyes, 661.
- Sergeant shales, Cretaceous, Iowa: Keyes, 655.
- Sergeant terrane, Cretaceous, Iowa: Keyes, 661.
- Sespe formation, Oligocene, California: Arnold and Garfias, 21.
- Sevier shale, Ordovician, Virginia: Stose, 1152.
- Sewickley sandstone, Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Sexton Creek limestone, Silurian, Illinois: Savage, 1031.
- Shakopee dolomite, Ordovician, Illinois: Cady, 185; Cox, 278.
- Shakopee dolomite, Ordovician, Minnesota: Grout and Soper, 502.
- Shakopee formation, Canadian, Upper Mississippi Valley: Walcott, 1244.
- Shakopee terrane, Cambrian, Iowa: Keyes, 661.
- Shannon(?) sandstone lentil, Cretaceous, Wyoming: Barnett, 41.
- Sharon conglomerate, Carboniferous, West Virginia: Hennen and Reger, 527.
- Shasta series, Cretaceous, California: Pack and English, 903.
- Shawangunk conglomerate, New York: Brown, 140.
- Shawangunk grit, Devonian, New York: Clarke, 244.
- Shenandoah limestone, Cambro-Ordovician, Pennsylvania: Bliss and Jonas, 101.
- Sherbrooke formation, Cambrian, British Columbia: Allan, 5, 6.
- Shinarump conglomerate, Triassic, Arizona: Gregory, 497.
- Shinumo quartzite, Algonkian, Arizona: Noble, 880.
- Shulie formation, Pennsylvanian, Nova Scotia: Bell, 77.
- Shuswap series, British Columbia: Schofield, 1041.
- Shuswap series, pre-Beltian, British Columbia: Daly, 306.
- Shuswap terrane, pre-Beltian, British Columbia: Daly, 306.
- Sicamous limestone, pre-Beltian, British Columbia: Daly, 306.
- Sicker schists, Jurassic or Triassic, British Columbia: Clapp, 223.
- Sicker series, Jurassic or Triassic, British Columbia: Clapp, 223, 225.
- Sicker series, Jurassic?, British Columbia: Clapp and Cooke, 230.
- Sicker volcanics, Jurassic or Triassic, British Columbia: Clapp, 223.
- Siesta formation, Pliocene, California: Lawson, 724.
- Siestan formation, Tertiary, California: Merriam, 834.
- Signal Hill formation, pre-Cambrian, Newfoundland: Van Ingen, 1222.
- Sillery formation, Cambrian, Quebec: Dresser, 367.
- Sir Donald formation, Cambrian, British Columbia: Daly, 306.
- Sioux terrane, pre-Cambrian, Iowa: Keyes, 661.
- Siyeh formation, pre-Cambrian, British Columbia: Schofield, 1040, 1043.
- Siyeh limestone, pre-Cambrian, British Columbia: Walcott, 1246.

- Skaneateles shale, Devonian, New York: Houghton, 577; Luther, 775.
- Skeena formation, Cretaceous, British Columbia: McConnell, 781.
- Skeena series, Cretaceous or Jurassic?, British Columbia: Malloch, 802.
- Skidegate formation, Cretaceous, British Columbia: MacKenzie, 793.
- Skidegate member, Jurassic, British Columbia: Clapp, 227.
- Smithfield limestone, pre-Cambrian, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Smith Point formation, Cambrian, Newfoundland: Van Ingen, 1222.
- Snake Hill formation, Ordovician, New York: Cushing and Ruedemann, 296.
- Sobrante sandstone, Miocene, California: Lawson, 724.
- Sodus member, Silurian, Ontario: Williams, 1303.
- Sodus shale, Silurian, New York: Schuchert, 1054.
- Solen limestone, Devonian, Iowa: Keyes, 657.
- Solon terrane, Devonian, Iowa: Keyes, 661.
- Somerville slates, Carboniferous, Massachusetts: Lahee, 702.
- Sooke formation, Miocene, British Columbia: Clapp, 227.
- Sooke gabbro, Oligocene, British Columbia: Cooke, 276.
- Sooke intrusives, post-Eocene, British Columbia: Clapp, 227.
- Soudan formation, Archean, Minnesota: Grout and Soper, 502.
- Soultan series, pre-Cambrian, Lake Superior region: Keyes, 662.
- Southgate, Ordovician, Indiana: Cumings and Galoway, 295.
- Spann limestone member, Mississippian, Kentucky: Munn, 869.
- Spence Bridge volcanic group, Jura-Cretaceous, British Columbia: Drysdale, 369.
- Spergen terrane, Carboniferous, Iowa: Keyes, 661.
- Split-rock terrane, pre-Cambrian, Iowa: Keyes, 661.
- Sprout Brook limestone, New York: Fettke, 420.
- Squantum slates, Carboniferous, Massachusetts: Lahee, 704.
- Squantum tillite, Carboniferous, Massachusetts: Lahee, 702; Sayles, 1034.
- Stafford limestone, Devonian, New York: Houghton, 577; Luther, 775.
- Stanton terrane, Carboniferous, Iowa: Keyes, 661.
- Star Peak formation, Triassic, Nevada: Schrader, 1048.
- Staten Island serpentine, pre-Cambrian, New York: Berkey and Healey, 79.
- Steep Rock series, pre-Cambrian, Ontario: Miller and Knight, 848.
- Stephen formation, Cambrian, British Columbia: Allan, 5, 6.
- Sterling granite-gneiss, Rhode Island: Loughlin and Hechinger, 767.
- Stillwater formation, Tertiary, Alaska: Fisher and Calvert, 422.
- Stockbridge dolomite, Cambrian and Ordovician, New York: Fuller, 441.
- Stockton formation, Triassic, New Jersey: Bayley *et al.*, 66.
- Stockton shales, Carboniferous, West Virginia: Krebs and Teets, 697.
- Stonehouse formation, Silurian, Nova Scotia: Williams, 1300.
- Stonewall limestone, Silurian, Manitoba: Kindle, 676.
- Stonewall series, Silurian, Manitoba: MacLean and Wallace, 796.
- Stony Mountain group, Ordovician, Manitoba: MacLean and Wallace, 796.
- Striped Peak formation, Algonkian, Idaho and Montana: Calkins and Jones, 192.
- Sudbury series, pre-Cambrian, Canada: Coleman, 262.
- Sudbury series, pre-Cambrian, Ontario: Coleman, 264; Collins, 269; Miller and Knight, 848.
- Sunbury shale, Carboniferous, Ohio and Kentucky: Morse and Foerste, 867.
- Sundance formation, Jurassic, Wyoming: Barnett, 39, 41; Hewett, 534.
- Supai formation, Carboniferous, Arizona: Noble, 880.
- Supai formation, Carboniferous (Pennsylvanian), Arizona: Hill, 539.
- Superiorie period, pre-Cambrian, Lake Superior region: Keyes, 662.
- Sutton formation, Jurassic, British Columbia: Clapp, 223.
- Sutton limestones, Jurassic and Triassic?, British Columbia: Clapp, 227; Clapp and Cooke, 230.
- Sweetland Creek shale, Devonian, Illinois: Cady, 185.
- Sylvania formation, Silurian, Michigan: Sherzer, 1081; Smith, 1108.
- Sylvania sandstone, Silurian, Ontario: Stauffer, 1123.
- Tapeats sandstone, Cambrian, Arizona: Hill, 538; Noble, 880.
- Teapot sandstone member, Cretaceous, Wyoming: Barnett, 39.
- Tejon, Eocene, California and Oregon: Arnold and Hannibal, 22.
- Tejon, Tertiary, California: Dickerson, 340.
- Tejon formation, Eocene, California: Arnold and Garfias, 21; Lawson, 724; Waring, 1254.
- Tejon formation, Tertiary, California: Pack and English, 903.
- Tejon group, Eocene, California: Dickerson, 341.
- Tejon group, Tertiary (Eocene), California: Dickerson, 339.
- Temblor group, Neocene, California: Anderson and Martin, 18.
- Temescal formation, Recent, California: Lawson, 724.
- Temiskamian, pre-Cambrian, Ontario: Miller and Knight, 848.
- Temiskaming series, pre-Cambrian, Ontario: Miller and Knight, 848.
- Temiskaming. *See also* Timiskaming.
- Temple Bar conglomerate, Quaternary, Arizona: Blanchard, 96.
- Tennessean series: Keyes, 661.
- Texada formation, Jurassic?, British Columbia: McConnell, 782.
- Thayer terrane, Carboniferous, Iowa: Keyes, 661.
- Thaynes limestone, Triassic, Idaho: Richards and Mansfield, 995.

- Thaynes limestone, Triassic, Wyoming: Schultz, 1058.
- Theresa formation, Cambrian, New York: Cushing and Ruedemann, 296.
- Thomaston granite, New York: Fette, 420.
- Thorold member, Silurian, New York and Ontario: Schuchert, 1054.
- Thorold member, Silurian, Ontario: Williams, 1303.
- Tice shale, Miocene, California: Lawson, 724.
- Tichenor limestone, Devonian, New York: Houghton, 577; Luther, 775.
- Timiskaming series, pre-Cambrian, Ontario: Burrows and Hopkins, 164.
- Timiskaming series, pre-Cambrian, Canada: Coleman, 262.
- Timiskaming series, pre-Cambrian, Quebec: Coleman, 264.
- Tindir group, Cambrian, Alaska and Yukon: Cairnes, 186.
- Tindir group, Cambrian or pre-Cambrian, Alaska and Yukon: Cairnes, 187.
- Tindir group, pre-Cambrian?, Yukon and Alaska: Cairnes, 189.
- Tipton terrane, pre-Cambrian, Iowa: Keyes, 661.
- Tokun formation, Tertiary, Alaska: Fisher and Calvert, 422.
- Tombigbee sand member, Cretaceous, Gulf States: Stephenson, 1128.
- Tombigbee sand member, Upper Cretaceous, Georgia: Berry, 80.
- Tonkawatta formation, pre-Beltian, British Columbia: Daly, 306.
- Tonto group, Cambrian, Arizona: Hill, 539; Noble, 880.
- Torrejon formation, Tertiary, New Mexico: Sinclair and Granger, 1093.
- Tranquille beds, Tertiary, British Columbia: Rose, 1016.
- Traverse formation, Devonian, Michigan: Smith, 1108.
- Traverse group, Devonian, Michigan: Cook, 273; Sherzer, 1081.
- Trenton formation, Ordovician, Illinois: Cady, 185.
- Trenton group, Ordovician, Quebec and Ontario: Raymond, 980.
- Trenton limestone, Ordovician, Michigan: Smith, 1108.
- Trenton limestone, Ordovician, Ontario: Johnston, 626.
- Tribune formation, Mississippian, Illinois: Blatchley, 98.
- Trinity group, Cretaceous, Texas: Richardson, 999.
- Trout Lake conglomerate, pre-Cambrian, Ontario: Coleman, 264.
- Troy shales, Cambrian, New York: Cushing and Ruedemann, 296.
- Tshinakian formation, pre-Beltian, British Columbia: Daly, 306.
- Tulameen group, Triassic?, British Columbia: Camsell, 197.
- Tulare formation, Pliocene, California: Pack and English, 903.
- Tullahoma group, Mississippian, Tennessee: Wade, 1239.
- Tully horizon, Devonian, New York: Houghton, 577; Luther, 775.
- Tully terrane, Devonian, Iowa: Keyes, 661.
- Turtle Mountain group, Devonian and Carboniferous, Alberta: MacKenzie, 794.
- Tuscaloosa formation, Cretaceous, Gulf States: Stephenson, 1128.
- Tuscaloosa formation, Cretaceous, Tennessee: Drake, 366.
- Twin Creek limestone, Jurassic, Idaho: Richards and Mansfield, 995.
- Twin Creek limestone, Jurassic, Wyoming: Schultz, 1058.
- Two Medicine formation, Cretaceous, Montana: Stebinger, 1125, 1126.
- Two Mile limestones (Ames limestone), Pennsylvanian, West Virginia: Krebs and Teets, 697.
- Tyee porphyrite, Jurassic, British Columbia: Clapp and Cooke, 230.
- Tyee sandstone, Eocene, Oregon: Washburne, 1257.
- Tymochtee shales, Silurian, Michigan: Sherzer, 1081.
- Tymochtee shales, Silurian, Ontario: Stauffer, 1123.
- Uffington shale, Carboniferous, West Virginia: Hennen and Reger, 527.
- Uinta formation, Tertiary, Utah: Douglass, 360.
- Umpqua formation, Eocene, Oregon: Washburne, 1257.
- Umpqua formation, Tertiary, Oregon: Dickerson, 347.
- Uncompahgre formation, Algonkian, Colorado: Cross and Larsen, 290.
- Uniontown sandstone, Pennsylvania, West Virginia: Krebs and Teets, 697.
- Unkar group, Algonkian, Arizona: Noble, 880.
- Utica formation, Ordovician, Quebec and Ontario: Raymond, 980.
- Utica shale (Eden), Ordovician, Michigan: Smith, 1108.
- Uvalde formation, Pliocene, Texas: Deussen, 336.
- Valdes formation, Cretaceous or Jurassic, British Columbia: Cairnes, 191.
- Valdez group, Mesozoic?, Alaska: Moffit, 854.
- Vancouver group, Jurassic and Triassic?, British Columbia: Clapp, 223, 225, 226, 227; Clapp and Cooke, 230.
- Vancouver group, Jurassic and Triassic?, British Columbia: MacKenzie, 793.
- Vancouver volcanics, British Columbia: Clapp, 223.
- Vancouver volcanics, Jurassic or Triassic, British Columbia: Clapp, 225, 227.
- Vancouver volcanics, Jurassic and Triassic?, British Columbia: Clapp and Cooke, 230.
- Van Horn sandstone, Cambrian?, Texas: Richardson, 999.
- Vanport limestone, Carboniferous, West Virginia: Hennen and Reger, 527.
- Vaqueros formation, Miocene, California: Dickerson, 341; Pack and English, 903.
- Varennesic period, pre-Cambrian, Lake Superior region: Keyes, 662.
- Vashon drift, Pleistocene, British Columbia: Clapp, 223, 227.
- Vashon drift, Quaternary, British Columbia: Clapp, 225.
- Verdi terrane, Carboniferous, Iowa: Keyes, 661.
- Vermont formation, Cambrian, Vermont: Gordon, 476.

- Vernon red shale, Silurian, New York: Hopkins, 571.
- Versailles beds, Ordovician, Indiana: Shideler, 1082.
- Vineyard formation, Quaternary, New York: Fuller, 441.
- Virgelle sandstone, Cretaceous, Montana: Stebinger, 1125, 1126.
- Virginia slates, Algonkian, Minnesota: Grout and Soper, 502.
- Vishnu schist, Archean, Arizona: Noble, 880.
- Wabana series, Ordovician, Newfoundland: Van Ingen, 1222.
- Wabash stage, Pleistocene, Iowa: Hay, 522.
- Waccamaw marl, Miocene, South Carolina: Rogers, 1013.
- Waconia moraine, Pleistocene, North Dakota: Simpson, 1090.
- Waits River limestone, Ordovician, Vermont: Dale, 300; Richardson and Turner, 996; Richardson *et al.*, 997.
- Waldron clay, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Wall Creek(?) sandstone lentil, Cretaceous, Wyoming: Barnett, 41.
- Wall Creek sandstone member, Cretaceous, Wyoming: Barnett, 39.
- Wamsutta beds, Carboniferous, Rhode Island and Massachusetts: Warren and Powers, 1256.
- Wamsutta formation, Permian?, Massachusetts: Loughlin and Hechinger, 767.
- Wanapitei quartzite, pre-Cambrian, Ontario: Colman, 264.
- Wanipigow series, pre-Cambrian, Manitoba: Moore, 860.
- Wanipigow series, pre-Cambrian, Ontario: Miller and Knight, 848.
- Wappinger limestone, Cambrian and Ordovician, New York: Fetteke, 420.
- Wardner formation, Mississippian, British Columbia: Schofield, 1040, 1041.
- Wardner limestone, Mississippian, British Columbia: Schofield, 1039.
- Wark gneiss, British Columbia: Clapp, 227.
- Wark gneiss, Jurassic, British Columbia: Clapp, 223; Clapp and Cooke, 230.
- Warsaw formation, Mississippian, Mississippi Valley: Weller, 1270.
- Warsaw terrane, Carboniferous, Iowa: Keyes, 661.
- Wasatch beds, Tertiary, Wyoming: Granger, 485.
- Wasatch formation, Tertiary, Colorado and Utah: Woodruff and Day, 1333.
- Wasatch group, Tertiary, Wyoming: Schultz, 1058.
- Washington fireclay shales, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Washita group, Cretaceous, Texas: Richardson, 999.
- Watchung basalt, Triassic, New Jersey: Bayley *et al.*, 66.
- Waucoma limestone, Silurian, Illinois and Iowa: Savage, 1031.
- Waverly formation, Mississippian, Kentucky: Munn, 869.
- Waverly series or Waverlian series, Carboniferous, Ohio and Kentucky: Morse and Foerste, 867.
- Waverlyan series: Keyes, 661.
- Wayne formation, Silurian, Tennessee: Drake, 366; Wade, 1239.
- Waynesburg sandstone, Permo-Carboniferous, West Virginia: Krebs and Teets, 697.
- Waynesville, Ordovician, Indiana: Cumings and Galloway, 295.
- Weber quartzite, Pennsylvanian, Wyoming: Schultz, 1058.
- Wells formation, Pennsylvanian, Idaho: Richards and Mansfield, 995.
- Westerville limestone, Pennsylvanian, Iowa: Tilton, 1170.
- West River shale, Devonian, New York: Houghton, 577; Luther, 775.
- West Union bed, Silurian, Ohio: Morse and Foerste, 867.
- Weymouth formation, Cambrian, Massachusetts: Loughlin and Hechinger, 767.
- Whirlpool sandstone member, Silurian, New York and Ontario: Schuchert, 1054.
- Whirlpool member, Silurian, Ontario: Williams, 1303.
- White River formation, Tertiary, North Dakota: Lloyd, 758.
- White River formation, Tertiary, Wyoming: Barnett, 39, 41.
- Wichita formation, Carboniferous, Texas: Case, 208.
- Wichita formation, Permian, Oklahoma: Munn, 869.
- Wilcox formation, Eocene, Texas: Deussen, 336.
- Wilkeson formation, Tertiary, Washington: Daniels, 308.
- Williamson member, Silurian, Ontario: Williams, 1303.
- Williamson shale, Silurian, New York: Schuchert, 1054.
- Willow Creek formation, Upper Cretaceous or Eocene, Montana: Stebinger, 1124.
- Wilmore formation, Ordovician, Kentucky: Miller, 843.
- Wilmore member, Ordovician, Kentucky: Foerste, 427.
- Wilson formation, Carboniferous, Oklahoma: Buttram, 178.
- Windsor formation, Mississippian, Nova Scotia: Bell, 77.
- Windsor series, Carboniferous, Nova Scotia: Hyde, 602.
- Windsor series, Mississippian, Nova Scotia: Hyde, 602.
- Winifrede (Lower) sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Winifrede (Upper) sandstone, Carboniferous, West Virginia: Krebs and Teets, 697.
- Winnipegosis dolomite, Devonian, Manitoba: Kindle, 676; MacLean and Wallace, 796.
- Winslow formation, Pennsylvanian, Oklahoma: Snider, 1113.
- Winston limestone, Silurian, Illinois, Iowa: Savage, 1031.
- Winterset limestone, Pennsylvanian, Iowa: Tilton, 1070.
- Wisconsin drift, Pleistocene, New Jersey: Bayley *et al.*, 66.
- Wisconsin drift, Quaternary, New York: Fuller, 441.

- Wisconsin stage, Pleistocene, Iowa: Hay, 522.
Wisconsin stage, Pleistocene, Maine: Bastin and Williams, 60.
Wisconsin terrane, Pleistocene, Iowa: Keyes, 661.
Wiscoy shale, Devonian, New York: Houghton, 577.
Wiscoy shales, Devonian, New York: Luther, 775.
Wise formation, Pennsylvanian, Virginia: Butts, 179, 180.
Wissahickon mica gneiss, pre-Cambrian, Pennsylvania: Bliss and Jonas, 101.
Wolcott limestone, Silurian, New York: Schuchert, 1054.
Wolcott member, Silurian, Ontario: Williams, 1303.
Woodburn, Ordovician, Kentucky: Miller, 843.
Woodbury shales, Cretaceous, Iowa: Keyes, 655.
Woodbury terrane, Cretaceous, Iowa: Keyes, 661.
Woodside shale, Triassic, Idaho: Richards and Mansfield, 995.
Woodside formation, Triassic, Wyoming: Schultz, 1058.
Woodville sandstone, Permo-Carboniferous?, Michigan: Smith, 1108.
Yakoun volcanics, Jurassic, British Columbia: MacKenzie, 793.
Yankeetown formation, Mississippian, Illinois: Weller, 1269.
Yankeetown formation, Mississippian, Mississippi Valley: Weller, 1270.
Yarmouth stage, Pleistocene, Iowa: Hay, 522.
Yegua formation, Eocene, Texas: Deussen, 336.
Yonkers gneiss, pre-Cambrian, New York: Berkey and Healey, 79.
Yorktown formation, Miocene, Virginia: Olsson, 889.
Yukon group, pre-Cambrian, Alaska and Yukon: Cairnes, 186, 189.
Yukon group, pre-Cambrian?, Yukon and Alaska: Cairnes, 187.
Zion Hill quartzite, Cambrian, New York: Cushing and Ruedemann, 296.
Zuni sandstone, Cretaceous, New Mexico: Winchester, 1324.



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